Province of British Columbia
Ministry of Energy, Mines and
Petroleum Resources
Hon. Jack Davis, Minister

MINERAL RESOURCES DIVISION
Geological Survey Branch

BRITISH COLUMBIA MINERAL EXPLORATION REVIEW 1987

INFORMATION CIRCULAR
1988 – 1

88-03245/

Rc
G41
C
I64 1982-1
1982
c.4

Province of British Columbia
Ministry of Energy, Mines and
Petroleum Resources

MINERAL RESOURCES DIVISION
Geological Survey Branch

BRITISH COLUMBIA MINERAL EXPLORATION REVIEW 1987

INFORMATION CIRCULAR
1988 — 1

MINERAL RESOURCES DIVISION
Geological Survey Branch

British Columbia Cataloguing in Publication Data
Main entry under title:
British Columbia mineral exploration review. -- 1985-

(Information circular, ISSN 0825-5431)
Annual.
Issuing body varies: 1985, Geological Branch;
1986- , Geological Survey Branch.
Continues: British Columbia exploration review.
ISSN 0828-6094 = British Columbia mineral exploration review

1. Prospecting - British Columbia - Periodicals. 2. Geology, Economic - British Columbia - Periodicals. 3. Mines and mineral resources - British Columbia - Periodicals. I. British Columbia. Geological Branch. II. British Columbia. Geological Survey Branch. III. Series: Information circular (British Columbia. Ministry of Energy, Mines and Petroleum Resources)

TN270.A1B74 622'.1'09711
Rev. Jan. 1988

VICTORIA
BRITISH COLUMBIA
CANADA

January 1988

INTRODUCTION

V.A. Preto, Manager, District Geology and Coal Resources
Room 200, 756 Fort Street, Victoria, B.C. V8V 1X4
Telephone: (604) 356-2833

INTRODUCTION

Mineral exploration in British Columbia reached what promises to be an all-time high in 1987, driven by continued strong interest in precious metals, flow-through financing, continued exploration successes, and the opening of another new gold mine at Hedley.

Major diamond-drilling programs are up 68 per cent, to 150 for 1987 from 89 in 1986. The number of mineral claims staked to the end of September was 74 500, up 54 per cent from 48 300 for the same period in 1986. If this trend continues there will be approximately 106 000 mineral claims staked by year's end, equalling the all-time high of 1983 (Figure 1). Exploration expenditures are expected to be in the order of $130 million, up from $94.2 million in 1986 and $80 million in 1985. This, again, should be a record.

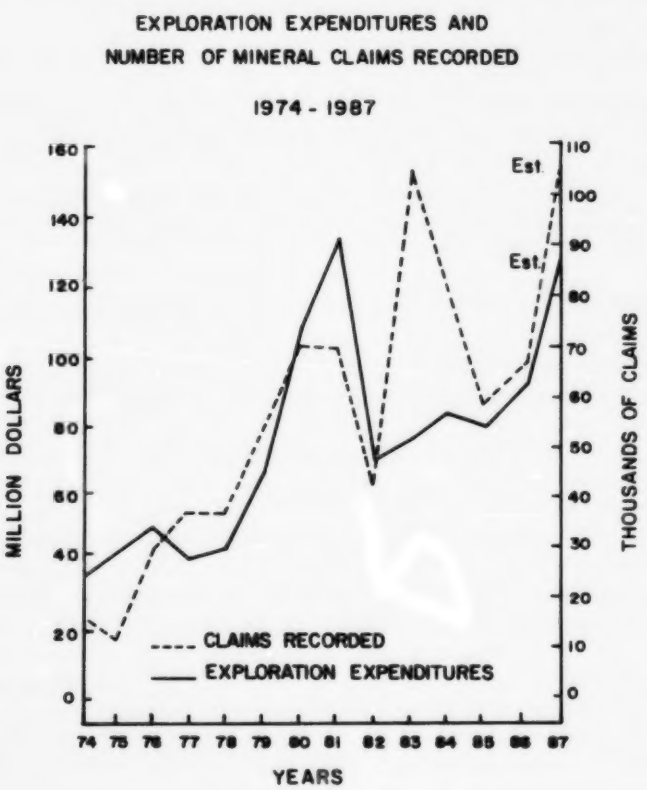

Figure 1. Exploration expenditures and number of mineral claims recorded, 1974-1987.

Recent estimates are that 1987 gold production is going to be about 350 000 ounces or nearly 11 tonnes, up one quarter from the 280 000 ounces or 8.7 tonnes produced in 1986. By 1990 production is expected to exceed 600 000 ounces or 18.7 tonnes and thus surpass the peak annual production of 18 tonnes achieved in 1939.

There were at least 25 major underground exploration projects in British Columbia during 1987, and at least 50 properties can be listed as having meaningful reserves that are, or are close to being, economically viable. At present, a total of 28 projects have formally entered the government permitting process - 21 of these projects are for precious metals.

The Nickel Plate mine of Mascot Gold Mines Ltd. officially opened August 17. Mill throughput and gold production to date have exceeded design specifications. Operations continued very successfully at the Blackdome mine which reached full payback within 9 months of its opening in May 1986, and at the Brenda, Bell and Endako porphyry mines, all of which re-opened in 1987. A continued strengthening of the price of copper in the year brought welcome relief to all the porphyry copper operations in the province, including the Highland Valley Copper, the Island Copper and the Similkameen mines.

EXPLORATION HIGHLIGHTS

As in previous years, gold, silver and polymetallic deposits with precious metal values continue to be found in four main environments, with a sprinkling of deposits that are transitional between these models. A summary of exploration highlights by deposit is given below, followed by more detailed accounts by each of the seven District Geologists.

GOLD-BEARING SKARNS

The importance of this deposit type was emphasized earlier in the year by the opening of the Nickel Plate mine near Hedley. This old mine, now in its third life, has already produced 48.4 million grams of gold from 3.6 million tonnes of underground ore between 1902 and 1957. Pittable reserves are 9.0 million tonnes grading 4.56 grams per tonne with an additional 1.8 million tonnes of similar grade mineable by underground methods. Together with the past production, this brings the known gold content of this deposit to roughly 90 tonnes, with excellent prospects for discovering additional reserves.

British Columbia has more than 300 other recorded skarn occurrences, roughly one-third of which are known to contain gold. Some of these have produced in the past and others are potential producers, for example, the Tillicum Mountain property of Esperanza Explorations Ltd. and deposits at Zeballos on Vancouver Island, on Banks Island and on Texada Island.

Another deposit which is generally regarded as a porphyry system, but which has skarn affinities, is the QR deposit of Placer Dome Inc., west of Likely. Gold occurs associated with intense propylitic alteration in Upper Triassic volcanics and sediments cut by a consanguineous differentiated syenitic stock. This deposit is at the feasibility stage. The favourable geology that hosts the QR deposit continues to the northwest along the axis of the Quesnel trough where intrusions similar to the QR stock are known to occur in an area of poor exposures. These are obvious targets for more QR-type deposits, but also a challenge to the explorationist.

EPITHERMAL DEPOSITS

The search for gold-bearing epithermal systems has continued at a brisk pace for several years with considerable success. The Blackdome mine, located 250 kilometres north of Vancouver, began production in May 1986 at 165 tonnes per day from a classic, high-level epithermal vein system hosted in Eocene subaerial volcanic flows and pyroclastics.

The Toodoggone camp, located 300 kilometres north of Smithers, has been one of the hottest exploration areas in the province for several years. More than $10.6 million were spent in this camp in 1987, compared to $3.5 million the previous year. This increased activity is due to three factors:

The completion of road access to the area, funded in good part by a $4.5-million government grant.

The decision by Cheni Gold Mines Inc. to go ahead at a planned production rate of 450 tonnes per day on its Lawyers deposit.

The considerable success of other projects in the area.

Significant developments in the Toodoggone this year have been the discovery of above-average grade gold-silver mineralization at depths of more than 330 metres at the Lawyers Cliff Creek zone; the tracing of mineralization by drilling and trenching over a strike length in excess of 750 metres at the Al deposit; and the discovery of gold-bearing skarn at Cheni Gold's Acapulco prospect.

Another very promising deposit is the Mount Washington property of Better Resources Ltd. on Vancouver Island. Mineralization is associated with a Tertiary quartz porphyry and breccia eruptive centre cutting Cretaceous Nanaimo Group sediments and occurs in tabular, shallow-dipping alteration zones locally up to 30 metres thick. Sulphides are mainly pyrite and arsenopyrite.

On Graham Island in the Queen Charlotte Islands, City Resources (Canada) Ltd. has completed a thorough re-assessment of

the Cinola deposit which represents the exposed middle to upper levels of a Tertiary epithermal hot-spring-type precious metal system.

VOLCANIC AND CLASTIC-HOSTED MASSIVE SULPHIDE DEPOSITS

Another important target is massive sulphide mineralization with precious metal values. On Vancouver Island, Abermin Corporation has continued an aggressive exploration program on its Lara property near Chemainus, and has announced its decision to go underground with a decline early in 1988.

The Adams Lake area, 65 kilometres northeast of Kamloops, has been the focus of intense exploration activity since late 1983, when A. Hilton discovered gold-bearing massive sulphides (Rea Gold) near Johnson Lake. The discovery in late 1985 of the Somatosum silver deposit by Minnova Inc. has opened up a new target in this area. This project has just entered the government permitting process. Mineralization is localized in tuffaceous sediments of the Paleozoic Eagle Bay assemblage, that lie on top of a thick sequence of mafic volcanics of similar age. Sulphides include tetrahedrite, galena, sphalerite, chalcopyrite and pyrite. Recently released reserve estimates are 595 000 tonnes of open-pittable ore, grading 1097 grams per tonne silver, 1.78 grams per tonne gold, 3.5 per cent zinc, 1.7 per cent lead and 1.2 per cent copper. Similar mineralization is being explored on the nearby Twin and Kamad properties of Esso Minerals Canada.

In the extreme northwestern corner of the province, Geddes Resources Ltd. is carrying out a major underground program at the 270-million-tonne plus Windy Craggy copper-gold-cobalt massive sulphide deposit.

VEIN DEPOSITS TRANSITIONAL TO PORPHYRY DEPOSITS

A number of gold deposits that can be classified as transitional between epithermal and porphyry systems occur in northwestern British Columbia and are in the advanced exploration and development stage.

Underground development work continued at the Dome Mountain property of Teeshin Resources Ltd. 40 kilometres east of Smithers. Gold-silver mineralization occurs in a number of mesothermal sheeted quartz veins in Early to Middle Jurassic volcanics and sediments. This deposit is at the feasibility stage.

The Stewart - Iskut River gold belt is one of the busiest, most exciting and promising areas in the province. At the southeast end of this belt, near Stewart, Westmin Resources Limited is at the production decision stage on its Silbak Premier - Big Missouri project. Quartz stockwork mineralization occurs in Early Jurassic andesitic volcanics intruded by the subvolcanic Premier porphyries. An open-pit operation at 1800 tonnes per day,

with capital costs in excess of $76 million, is anticipated for this project. If Silkbak Premier's past production is added to the 21 million grams of gold and 615 million grams of silver represented by the current reserves, the total known mineable precious metals contained in these two deposits are 76 tonnes of gold and about 1875 tonnes of silver.

Forty-two kilometres northwest of Silbak Premier, another very active camp is the Sulphurets area, where at least 18 separate mineralized zones have been located in Early Jurassic volcanics intruded by syenites. Mineralization in these zones ranges from copper-molybdenum-gold to disseminated gold to complex gold-silver vein systems and stockworks to simple epithermal veins. The West zone at Brucejack Lake continues to be the target of an aggressive underground development program by Newhawk Gold Mines Ltd. Drill-indicated and inferred reserves were 1.4 million tonnes grading 11.66 grams per tonne gold and 785 grams per tonne silver at the end of 1986. New reserve figures resulting from recent work have not yet been released.

Perhaps the most exciting developments are occurring 50 kilometres to the northwest, at the Iskut River end of the belt, where Skyline Explorations Ltd. is moving ahead with production plans for its Stonehouse (Reg) deposit. Gold-silver-copper mineralization here occurs in a number of lenses or veins along a fracture system in Lower Jurassic volcaniclastic and sedimentary rocks and has been traced for a strike length of 1.5 kilometres. This deposit is transitional between a porphyry system at depth and a mesothermal vein system above.

The Iskut camp was one of the busiest areas in the province in 1987 with exploration expenditures of roughly $10 million and at least 15 companies carrying out major programs. Most notable amongst these is the Cominco Ltd. - Delaware Resources Corp. joint venture's Snip property, where a major drill program has produced excellent results from a system of well-defined quartz veins over a strike length of 900 metres and a vertical distance of more than 120 metres. Facilities at this property are being upgraded for winter work in anticipation of an underground program.

West of Dease Lake, the North American Metals Corporation - Chevron Minerals Ltd. joint venture continued with underground development work on the Golden Bear deposit. Gold mineralization occurs in silicified and breccia zones along a major fault zone between Permian limestone and upper Triassic andesites. This deposit is vein type with epithermal characteristics. The best mineralization is in flexures or rolls in the fault system. Reserves for the Bear main zone are approximately 1.35 million tonnes grading 13.1 grams per tonne gold. The deposit is at the feasibility stage.

Southeast of Revelstoke, near the old mining town of Camborne, very promising results have been obtained by Granges Exploration Ltd. from extensive drilling on the Goldfinch

property. Native gold and tetrahedrite occur in structurally controlled quartz veins in Paleozoic metasedimentary and metavolcanic rocks of the Broadview and Jowett formations.

OTHER DEPOSITS OF INTEREST

A number of other gold deposits of different types are highlights on the British Columbia scene. Some are at the advanced underground development stage, for example, the Abo deposit of the Bema Industries Ltd. - Kerr Addison Mines Limited joint venture at Harrison Lake and the Willa property of Northair Mines Limited near Slocan.

ACKNOWLEDGMENTS

The articles which follow provide more detail of the activity in each of the seven District Geologist's areas. A separate section is devoted to industrial minerals exploration. Information on mineral exploration programs was supplied to the District Geologists, either directly or through press releases, by the many exploration companies active throughout the province. Mineral claims and exploration expenditure statistics were supplied by the ministry's Mineral Titles Branch and by the British Columbia and Yukon Chamber of Mines. Input was by Debbie Bulinckx and Jacqui Patenaude, editing by John Newell and Rosalyn Moir. The cooperation and contributions of these individuals and agencies are gratefully acknowledged.

Figure 2. Selected exploration and development projects in British Columbia, 1987 (X = polymetallic project; ▲ = precious metal project; △ = base metal project; ■ = coal; ▼ = placer; □ = other).

TABLE 1. EXPLORATION AND DEVELOPMENT IN BRITISH COLUMBIA, 1987
(Map numbers are keyed to Figure 2)

Map No.	Property/MINFILE Name (Owner/Operator)	Inventory No.	Mining Division	NTS	Lat.	Long.	Commodity	Deposit Type	Work Done; Remarks
NORTHWESTERN DISTRICT									
1	Windy-Craggy (Geddes Resources)	114P-002	Atlin	114P/7E	59°44'	137°45'	Ag,Au,Cu, Pb,Zn,Ba	Volcanogenic massive sulphide	> 1000 m of underground development; 2 ddh, 587 m; geological mapping
2	Tats (Geddes Resources)	114P-003	Atlin	114P/12E	59°39'	137°43'	Cu,Co,Au	Massive sulphide	3 ddh, 346 m; geological mapping
3	Rime (St. Joe Canada)	114P-061	Atlin	114P/11, 12,13	59°45'	137°37'	Au,Ag,Cu	Massive sulphide	2 ddh, approx. 700 m
4	Low Herbert, Grizzly Heights (Stryker Resources/ Freeport Resources)	114P-064, 068	Atlin	114P/7E, 7W,8W	59°20'	136°35'	Ag,Au,Cu, Pb,Zn,Ba	Vein and volcanogenic massive sulphide	5 ddh, 1433 m; sampling
5	Engineer (Total Erickson Resources)	104M-014	Atlin	104M/8E	59°29'	134°13'	Au,Ag	Vein	8 ddh, 1778 m; geological mapping; geochem.; VLF-EM, mag.
6	Pictou (Homestake Mineral Development)	104N-044	Atlin	104N/12E	59°34'	133°40'	Au	Vein	rcrd, 3000 m
7	Yellowjacket (Homestake Mineral Development)	104N-043	Atlin	104N/12E	59°35'	133°33'	Au	Vein	15 ddh, 2550 m; rcrd
8	Spruce Creek/Shuksan (Placer Dome)	104N-098	Atlin	104N/11W	59°34'	133°28'	Au	Vein	10 ddh, 1399 m; mag., VLF-EM
9	Lakeview (Cream Silver Mines)	104N-009	Atlin	104N/11W	59°38'	133°27'	Au,Ag	Vein	11 ddh, 1250 m; geological mapping; geochem.; mag., VLF-EM, IP; bulk sampling
10	Ruby Mountain (Cream Silver Mines)	104N-006	Atlin	104N/11W	59°42'	133°25'	Pb,Zn,Sn, W	Skarn	12 ddh, 1128 m; geological mapping; geophys.
11	Tulsequah Chief (Cominco)	104K-002	Atlin	104K/11, 12	58°40'	133°30'	Ag,Au,Pb, Zn,Cu	Volcanogenic massive sulphide	approx. 7 ddh, approx.4000 m; geological mapping
12	Outlaw (Chevron Canada Resources/ Diamet Minerals/ Lightning Creek Mines)	104K/083	Atlin	104K/10W	58°32'	132°44'	Au,Ag,Mn, Pb,Zn	Vein	Trenching; geological mapping; 40 ddh, 3509 m on all Chevron properties

13	Nie (Chevron Canada Resources/ Diamet Minerals/ Lightning Creek Mines)	104K-081	Atlin	104K/8W	58°18'	132°18'	Au	Vein	ddh (see above)
14	Tot (Chevron Canada Resources/ Diamet Minerals/ Lightning Creek Mines)	104K/037	Atlin	104K/8W	58°19'	132°24'	Sb,Au	Vein	ddh (see above)
15	Tut (Chevron Canada Resources/ Diamet Minerals/ Lightning Creek Mines)	104K/080	Atlin	104K/8W	58°17'	132°26'	Au,Ag	Vein	ddh (see above)
16	Slam (Chevron Canada Resources/ Diamet Minerals/ Lightning Creek Mines)	104K-082	Atlin	104K/1E	58°14'	132°07'	Au,Ag,Sb	Vein	ddh (see above)
17	Golden Bear/Muddy Lake (North American Metals B.C./Chevron Canada Resources)	104K/079	Atlin	104K/1W	58°13'	132°17'	Au,Ag	Vein	77 underground ddh, 3498 m; 1124 m underground development; road survey; feasilibity study
18	Silverknife (Reg Resources/Terly Resources/Chevron Canada Resources)		Liard	104O/16W	59°56'	130°22'	Ag,Pb,Zn	Manto	17 ddh, 1800 m
19	McDame (Cassiar Mining)	104P-084	Liard	104P/5E	59°20'	129°35'	Asbestos	Ultramafic	212 m underground development; feasibility study
20	Erickson Gold (Total Erickson Resources)	104P-019, 070,029 034	Liard	104P/4E	59°15'	129°37'	Au	Vein	23 ddh, 2380 m; trenching; soil sampling; geological mapping
21	Taurus Mine/Cornucopia (Taurus Resources)	104P-012	Liard	104P/5E	59°17'	129°41'	Au,Ag,	Vein	Underground drifting; 400 m drilling on Snowy Creek; 1 ddh, 76 m in Sable area; Hopeful adit
22	Thibert Creek (Equity Silver Mines)	104J-007	Liard	104J/13E	58°49'	130°09'	Au,Pt	Alteration zone	ddh, 762 m
23	Discovery (Duke Minerals)		Liard	104G/2W	57°30'	127°25'	Au		4 ddh, 457 m
24	Paydirt (Long Reach Resources)	104G-023	Liard	104G/3W, 4E	58°3'	131°33'	Au	Vein	4 ddh, 61 m; 65.5 m adit
25	Hank (Lac Minerals)	104G-107	Liard	104G/1W, 2E	57°13'	130°30'	Au,Cu,Ag	Vein, porphyry	9 ddh, 1067 m; IP
26	Bam (Radcliffe Resources)	104G-027	Liard	104G/2W	57°12'	130°53'	Au,Cu,Ag	Porphyry?	9 ddh, 851 m; geological mapping; IP; trenching
27	McClymont (Gulf International Minerals)	104B-126	Liard	104B/15W	56°49'	130°55'	Cu,Ag,Au	Vein	39 ddh, 3400 m; trenching; geological mapping; geochem.; geophys.

TABLE 1. EXPLORATION AND DEVELOPMENT IN BRITISH COLUMBIA, 1987 (CONTINUED)
(Map numbers are keyed to Figure 2)

Map No.	Property/MINFILE Name (Owner/Operator)	Inventory No.	Mining Division	NTS	Lat.	Long.	Deposit Type	Work Done; Remarks
NORTHWESTERN DISTRICT (CONTINUED)								
28	Sky 5 (Hector Resources)		Liard	104B/10W	56°39'	130°55'	Au	Vein 15 ddh, 621 m; geological mapping; sampling; airborne mag., EM
29	Reg/Johnny Mountain (Skyline Explorations	104B/107	Liard	104B/11E	56°37'	131°02'	Au,Ag,Cu	Vein 157 ddh, 13 665 m; 226 m raise development; 551.4 m drifting; airstrip extended to 1700 m; mill site prepared
30	Snip/Bron (Cominco/Delaware Resources)	104B/004	Liard	104B/11	56°41'	131°05'	Au,Ag,Zn, Cu	Vein 73 ddh, 13 857 m; geological mapping; trenching; airstrip
31	Waratah (Tungco Resource)		Liard	104B/10W, 11E	56°41'	130°59'	Au	Vein 24 ddh, 1038 m; geological mapping; soil sampling; VLF-EM, mag.
32	Hemlo West (Delaware Resources/ American Ore/Golden Bend Resources)		Liard	104B/11E	56°40'	131°02'	Au	Vein 8 ddh, 956 m; trenching; geological mapping; soil sampling
33	Handel (Winslow Gold)		Liard	104B/10W, 11E	56°40'	131°00'	Au	Vein 7 ddh, 1095 m; geological mapping; soil sampling; VLF-EM, mag.
34	Inel (Inel Resources)	104B-113	Liard	104B/10W	56°38'	130°58'	Cu,Zn,Pb, Au,Ag,Mo	Vein Underground development; camp construction
35	Gossan (Western Canadian Mining)		Liard	104B/10W	56°37'	130°58'	Au,Ag,Cu, Zn	Massive sulphide 18 ddh, 2219 m; trenching; geological mapping; geochem.
36	Snip (Teck Corporation)	104B-116	Liard	104B/10W	56°35'	130°53'	Cu,Au	Vein 8 ddh, 1115 m; geological mapping; mag.
37	Doc/Globe (Magna Ventures)	104B-015	Skeena	104B/8W	56°21'	130°28'	Au,Ag,Pb	Vein 300 m drifting; underground dd; soil sampling
38	Konkin Gold Zone/ Treaty Creek (Teuton Resources)	104B-078	Skeena	104B/9E	56°35'	130°11	Au,Cu,Ag, Pb,Zn	Skarn 3 ddh, 183 m
39	Sulphurets/Red River (Newhawk Gold Mines, Lacana Mining/ Granduc Mines)	104B-118, 022	Skeena	104B/8E	56°30'	130°13'	Ag,Au	Vein 94 ddh, 10 668 m; decline advanced 157 m; 59 m underground development; access road completed
40	Gold Wedge (Catear Resources)	104B/105	Skeena	104B/8E	56°28'	130°10'	Au,Ag	Vein Underground development started; 43 ddh, 4117 m; trenching
41	Kerr (Western Canadian Mining)	104B-100	Skeena	104B/8E	56°28'	130°16'	Au,Ag,Cu	Porphyry, vein 14 ddh, 1450 m; trenching; geochem.

42	Mount Madge (Bighorn Development /Cateer Resources)		Skeena	104B/8E	56°27'	139°23'	Au,Ag	Vein	6 ddh, 650 m; geological mapping; geochem.
43	Scottie (Royal Scot Resources)	104B-074	Skeena	104B/1E	56°14'	130°05'	Au,Ag	Vein	Underground 5 ddh, 1524 m
44	Silver Butte (Tenajon Silver)	104B-083	Skeena	104B/1E	56°06'	130°02'	Ag,Au,Cu	Vein	23 ddh, 3810 m; >365 m adit started
45	Big Missouri (Westmin Resources/ Canacord Resources/ Tournigan Mining Explorations)	104B-046	Skeena	104B/1E	56°08'	130°03'	Ag,Au	Vein	92 ddh, 7292 m
46	Silbak Premier (Westmin Resources/ Silbak Premier Mines	104B-054	Skeena	104B/1E	56°03'	130°00'	Au,Ag,Cu	Vein	Phase I, 44 ddh, 5238 m; underground geological mapping; feasibility study
47	Todd Creek (Noranda Exploration/ Golden Nevada Resources)	104A-001	Skeena	104A/4,5	56°13'	129°46'	Au,Cu	Vein	9 ddh, 580 m; geological mapping; rock sampling
48	Joutel/Red Cliff? (Joutel Resources)	104A-037?	Skeena	104A/4W	56°07'	129°52'	Au,Ag,Cu		6 ddh, 1036 m; access road; trenching
49	Dolly Varden (Dolly Varden Minerals)	103P-188	Skeena	103P/11W	55°41'	129°31'	Ag,Pb,Zn, Cu	Vein	5504 m underground development; 1488 m underground ddh
50	Kit (Cominco)	104P-245	Skeena	103P/11W	55°45'	129°27'	Ag	Shear zone	5 ddh, 720 m; UTEM and mag.
51	Anyox/Hidden Creek (Cominco)	103P-021, 022	Skeena	103P/5W	55°25'	129°50'	Cu,Au,Ag, Zn	Volcanogenic massive sulphide	6 ddh, 1517 m; 30 km UTEM and mag.
52	Porcher Island (Imperial Metals)	103J-002	Skeena	103J/1W	54°02'	130°25'	Au	Vein	approx. 15 ddh; geochem.
53	Keech/Banker (Gold Ventures)	103H-010	Skeena	103H/5W	53°18'	129°57'	Au,Zn	Shear	7 ddh, 464 m; geochem.; VLF-EM
54	Yellow Giant (Trader Mines)	103G-024	Skeena	103G/5W	52°22'	130°08'	Au	Vein	71 ddh, 8018 m; trenching
55	Skarn (Trader Resources)		Skeena	103G/8E	53°27'	130°00'	V,Ti,Pt	Ultramafic	1 ddh, 155 m; detailed rock sampling; geological mapping; mag.
56	Burn/Portland (Terracamp Developments)	103I-019	Skeena	103I/10E, 15W	54°41'	128°48'	Au,Ag,Cu	Vein	3 ddh, 395 m; trenching
57	Kalum (Cannon Explorations)	103I-118	Skeena	103I/15E, 15W	54°47'	128°46'	Au	Vein	6 ddh
58	Kitimat (BP Resources Canada)		Skeena	103I/2E	54°08'	128°43'	Au	Vein	4 ddh, 210 m; geophys.; geochem.
59	Al (Energex Minerals)	94E-091	Omineca	94E/6W	54°28'	127°23'	Au	Vein	122 ddh, 8687 m; 165 trenches, 12 000 m; soil sampling
60	Mets (Manson Creek Resources)	94E-093	Omineca	94E/6E	57°26'	127°00'	Au,Ag	Vein	40 ddh, 6060 m; geological mapping; geochem.; trenching
61	Metsantan (American Ore)	94E-064	Omineca	94E/6W	57°25'	127°17	Au,Ag	Alteration zone	1 ddh, 84 m; 3 trenches

TABLE 1. EXPLORATION AND DEVELOPMENT IN BRITISH COLUMBIA, 1987 (Continued)
(Map numbers are keyed to Figure 2)

Map No.	Property/MINFILE Name (Owner/Operator)	Inventory No.	Mining Division	NTS	Lat.	Long.	Commodity	Deposit Type	Work Done; Remarks
NORTHWESTERN DISTRICT (CONTINUED)									
62	Moosehorn (Cyprus Metals Canada)	94E-086	Omineca	94E/6E, 7W	57°20'	127°15	Au,Ag	Vein	11 ddh, 1067 m; VLF-EM, IP; geochem.
63	Golden Stranger (Western Horizon Resources)	94E-076	Omineca	94E/6	57°16`	127°15'	Au,Ag	Vein	18 ddh, 1859 m
64	Lawyers (Cheni Gold Mines)	94E-066, 067,074	Omineca	94E/6E	57°20'	127°12'	Ag,Au	Vein	49 ddh, 10 432 m; millsite preparation; Omineca Mine Road extension; development adit started
65	Silver Pond (St. Joe Canada)	94E-069	Omineca	94E/6	57°20'	127°15'	Au,Ag	Vein	99 ddh, 12 935 m; trenching
66	Perry Mason (Cheni Gold Mines)		Omineca	94E/6E	57°17'	127°12'	Au,Ag	Vein	8 ddh, 1123 m
67	Chappelle/Baker (Multinational Mining	94E-026	Omineca	94E/6E	57°17'	127°09'	Ag,Au	Vein	28 ddh, 3616 m; VLF-EM
68	Shasta/Shas (Esso Minerals Canada	92E-050	Omineca	94E/2,3, 6,7	57°15'	127°00'	Au,Ag,Pb, Zn	Vein	8 ddh; access road; 38 trenches
69	Brenda (Canasil Resources)		Omineca	94E/7W	57°16'	126°52'	Au,Ag	Vein	24 ddh, 220 m; EM; trenching; soil and rock sampling
70	Acapulco (Cheni Gold Mines)	94E-058	Omineca	94E/2W	57°10'	126°56'	Cu,Zn,Pb, Ag	Skarn	5 ddh, 856 m; mag.
71	Marmot (Cheni Gold Mines)	94E-073	Omineca	94E/6E	57°17'	127°12'	Au,Ag,Pb	Vein	2 ddh, 323 m
72	Wrich (Cheni Gold Mines)	94E-082	Omineca	94E/2E	57°07'	126°47'	Au,Ag,Pb, Zn,Cu	Vein	5 ddh, 883 m
73	Motase Lake (Prolific Petroleum)	94D-001	Omineca	94D/3E	56°05'	127°05'	Au,Ag	Vein	10 ddh, 914 m
74	Tommy Jack/Goodridge and Bish (Noranda Exploration /Goldcap)	94D-031, 036	Omineca	94D/4E	56°08'	127°36'	Au,Ag,Pb, Zn	Vein	25 ddh, 1690 m; geochem.; mag.
75	Bell (Noranda)	93M-001	Omineca	93M/1W	55°01'	126°14'	Cu,Au	Porphyry	16 ddh, 1585 m; geological mapping
76	Danny Boy (Gold Canyon Resources)		Omineca	93M/1E	55°05'	126°03'	Ag,Pb,Zn	Vein	10 ddh; geochem.; max-min, mag.
77	Red (Equity Silver Mines)	93L-220	Omineca	93L/16E	54°59'	126°07'	Cu	Massive sulphide	7 ddh, 914 m
78	Skilokis Creek (Noranda Exploration/ Atna Resources)		Omineca	93M/3	55°14'	127°15'	Ag,Au,Cu, Mo	Vein	3 ddh, 185 m; geochem.
79	Lucky Boy (AJM Metals)	103I/146?	Omineca	103I-9W	54°33'	128°23'	Au	Vein	> 4 ddh, > 399 m; geochem.; mag., VLF-EM

80	Red Rose (Freeport Resources)	93M-067	Omineca	93M/4E	55°09'	127°36'	Au,Ag,W, Cu,Mo,U	Vein	2 ddh, 457 m; ungraded access road
81	Free Gold/SK (Total Erickson Resources)	93L-023	Omineca	93L/15E	54°45'	126°37'	Au,Ag,Pb, Zn,Cu	Vein	4 ddh, 349 m
82	Dome Mountain (Teeshin Resources, Canadian United Minerals, Total Erickson Resources)	93L-022	Omineca	93L/10, 15E	54°44'	126°37'	Au,Ag	Vein	428 m underground work; 43 ddh
83	Emerson (Lornex Mining)	93L/032	Omineca	93L/7W	54°25'	126°54'	Ag,Au,Pb, Zn		5 ddh, 327 m; IP
84	Canyon (Lacana Mining)	93L-031	Omineca	93L/7W	54°26'	126°51'	Cu,Au	Skarn	6 ddh, 914 m; trenching; geological mapping; geochem.
85	Mineral Hill (Dafrey Resources)		Omineca	93L/10E	54°31'	126°43'	Ag,Cu,Mo, Zn,Pb	Transitional vein	305 m ddh
86	Topley (Bishop Resources Development)	93L-015, 016	Omineca	93L/9E	54°32;	126°13'	Ag,Cu,Pb, Zn,Au	Vein	3 ddh
87	Richfield (Esso Minerals Canada)	93L-018	Omineca	93L/9E	54°35'	126°16	Ag,Au,Zn, Cu	Vein	4 ddh, 1134 m; 75 rcdh, 5486 m
88	Bob Creek/Gold Brick (Bard Silver and Gold)	93L-009	Omineca	93L/7E	54°18	126°38'	Au,Ag,Zn	Vein	ddh
89	Silver Queen (Houston Metals)	93L-002	Omineca	93L/2	54°05'	126°45'	Ag,Au,Pb, Zn,Ga,Ge	Vein	26 surface ddh, 2864 m; 39 underground ddh, 1668 m; 283 m decline; 300 m crosscut, 764 m drifting; metallurgical studies
90	Sam (Faraway Gold Mines)	93L-260	Omineca	93L/1W	54°10'	126°10'	Ag,Cu,Zn, Pb	Disseminated	36 ddh, 5927 m
91	Equity Silver mine (Equity Silver Mines)	93L-001	Omineca	93L/1W	54°11'	126°16'	Ag,Au,Cu	Transitional	13 000 m ddh
92	Gaul (Teck Corp./Equity Silver Mines)	93L-256	Omineca	93L/1W	54°10'	126°16'	Ag,Au,Cu	Transitional	6 ddh, 914 m
93	Dev (Normine Resources)		Omineca	93L/1E	54°10'	126°13'	Pb,Zn,Mo, Ag	Transitional	4 ddh, 653 m
94	New Moon (Newmont Exploration)	93E-011	Omineca	93E/13	53°57'	127°45'	Pb,Zn,Au, Ag	Vein	13 ddh, 1075 m; surface sampling and geological mapping
95	Coles Creek (Westbank Resources)	93E-041?	Omineca	93E/11	53°32'	127°15'	Pb,Zn,Cu, Ag		914 m ddh
96	Lean-To (Lansdowne Oil and Minerals)	93E-105	Omineca	93E/11E	53°38'	127°03'	Cu,Ag,Au	Transitional?	5 ddh, 610 m
97	Troitsa (Alpine Explorations)		Omineca	93E/11E	53°36'	127°05'	Au	Vein	5 ddh, 900 m; EM
98	Klappan (Gulf Canada Resources)		Omineca/ Liard	104H/1,2, 3,6,7,8, 9,10,11	57°15'	128°35'	Coal (anthracite)		34 ddh, 5000 m; Stage II submission; detailed geological mapping

TABLE 1. EXPLORATION AND DEVELOPMENT IN BRITISH COLUMBIA, 1987 (Continued)
(Map numbers are keyed to Figure 2)

Map No.	Property/MINFILE Name (Owner/Operator)	Inventory No.	Mining Division	NTS	Lat.	Long.	Commodity	Deposit Type	Work Done; Remarks
NORTHWESTERN DISTRICT (CONTINUED)									
99	Bulkley (Atna Resources)	93M-095	Omineca	93M/3W	55°06'	127°21'	Coal (bituminous)		2 ddh
CENTRAL DISTRICT									
101	G (Gabriel Resources)	93G-004, 007,008	Cariboo	93G/1E	53°10'	122°20'	Au	Remobilized volcanogenic massive sulphide	35 ddh; 25 trenches; AEM; geochem.; geophys.
102	Frasergold (Eureka Resources)	93A-150	Cariboo	93A/7E	52°20'	120°35'	Au	Gold in phyllites	25 large diam. ddh
103	QR (Placer Dome)	93A-040, 041	Cariboo	93A/12W	52°40'	121°47'	Au	Transitional porphyry	21 ddh; pre-feasibility studies
104	Bob (Lac Minerals)	93B-054	Cariboo	93B/13E	52°55'	123°37'	Au,Ag	Epithermal	28 ddh, 250 m+; geophys.
105	Oboy (Lornex)		Cariboo	93C/9,16	52°46'	124°15'	Au	Epithermal	5 ddh, 200 m; trenching; geochem.
106	CPW, Peso (Pundata Gold Corp.)	93A-061, 141	Cariboo	93A/12E	52°35'	121°27'	Au	Gold in phyllites	40 ddh; 16 trenches; geochem.; geophys.
107	AK (International Rhodes/ Noranda)		Cariboo	93H/6	53°27'	121°15'	Au,Ag	Replacement veins	10 ddh; 10 trenches; mag,; geochem.
108	Lightning Creek (Lightning Creek Mines)	93H-001, 002	Cariboo	93H/4	53°01'	121°40'	Au	Placer	25 ddh; air and ground geophys.
109	G North (Ezekiel Explorations/ Mark Management)	93J-007	Cariboo	93J/14	54°55'	123°22'	Au	Volcanogenic massive sulphide	5 ddh, 150 m plus; geochem.; geophys.
110	Cariboo (E & B Explorations)	93A-121	Cariboo	93A/12	52°42'	121°45'	Au	Transitional porphyry	25 ddh; 10 trenches
111	Apex (Kleena Kleene Gold Mines)	92N-010, 012	Cariboo	92N/14	51°50'	125°05'	Au	Epithermal	160 m adit
112	Mouse Mountain (Quesnel Mines)	93G-003	Cariboo	93G/1	53°04'	122°19'	Au	Porphyry	10 ddh, 100 m plus, 15 trenches
113	Taseko-Pallisades (Westmin Joint Venture)	92O-005, 006	Clinton	92O/3	51°06'	123°20'	Au,Ag	Epithermal	25 ddh; 10 trenches; IP, VLF-EM;

114	May Be (Gibraltar)		Cariboo	93A/14	52°50'	121°12'	Pb,Zn,Ag	Replacement vein	20 ddh, 3000 m
115	Cat, Dog (Placer Dome)	93A-127	Cariboo	93A/11, 12	52°38'	121°32'	Au	Volcanogenic massive sulphide or porphyry related	10 ddh, 300+ m
116	Hixon Creek (Golden Rule/Noranda)	93G-014, 015	Cariboo	93G/7,8	53°26'	122°31'	Au	Volcanogenic massive sulphide(?)	10 ddh; mag.; IP; geochem.; 7 trenches planned
117	Pellaire (Lord River/Cathedral Gold)	92O-045	Clinton	92O/4E	51°06'	123°37'	Au,Ag	Epithermal	ddh; 60 m drifting; underground sampling
118	Taylor Windfall (Welcome North)	92O-028	Clinton	92O/3	51°07'	123°20'	Au,Ag	Epithermal	8 ddh; road
119	Tas (Noranda)		Omineca	93K/16E	54°53'	124°20'	Au	Porphyry related	20 ddh, 100+ m; 10 trenches; geochem.; IP, mag., EM
120	Takla Rainbow (Imperial Metals)	93N-082	Omineca	93N/11W	55°39'	125°17'	Au	Mesothermal vein or porphyry related	14 ddh; 13 km road
121	Trout (Kerr Addison/Welcome North)		Omineca	93F/10	53°40'	124°40'	Au	Epithermal	15 ddh; 15 trenches; geochem.
122	Cirque (Curragh Resources)	94F-008	Omineca	94F/11	57°34'	125°17'	Pb,Zn,Ag	Sedex	Underground bulk sampling announced
123	Snowbird (X-Cal Resources)	93K-036	Omineca	93K/7,8	54°27'	124°30'	Au,Sb	Stibnite veins	19 pdh; 10 ddh
124	Phil (Lincoln Resources)		Omineca	93N/1	55°07'	124°03'	Au,Cu	Porphyry related	15 ddh; 7 trenches; EM
NORTHEASTERN DISTRICT									
130	Transfer		Liard	93J/14E, 93P/3E	55°00'	121°06'	Coal		8 ddh, 1254 m; 36 rdh, 3945 m; 3 adits; additional drilling planned
131	Grizzly (Quintette Coal)		Liard	93P/3E	55°00'	121°04'	Coal		4 ddh, 545 m; 21 rdh, 3063 m; 3 adits
132	Perry Creek (Quintette Coal)		Liard	93P/3	55°03'	121°07'	Coal		5 rdh, 260 m
133	Mesa Expention (Quintette Coal)		Liard	93P/3E	55°02'	121°12'	Coal		35 rdh, 86=596 m; 1 ddh, 267 m
134	Bullmoose		Liard	93P/4	55°07'	121°31'	Coal		8 rdh, 400 m

TABLE 1. EXPLORATION AND DEVELOPMENT IN BRITISH COLUMBIA, 1987 (CONTINUED)
(Map numbers are keyed to Figure 2)

Map No.	Property/MINFILE Name (Owner/Operator)	Inventory No.	Mining Division	NTS	Lat.	Long.	Commodity	Deposit Type	Work Done; Remarks
NORTHEASTERN DISTRICT (CONTINUED)									
135	Cay		Liard	94G/12, 13	57°45'	123°55'	Ga,Ge,Pb, Zn		13 ddh, 1050 m; geochem.; geophys.; geologic mapping
136	Coral		Liard	94B/3	57°09'	123°24'	Pb,Zn		10 ddh, 500 m
137	Mount Selwyn (Alina International)		Omineca	94B/3	56°02'	123°41'	Au		4 ddh, 1500 m?
SOUTHEASTERN DISTRICT									
138	Eagle Mountain (Fording Coal)		Fort Steele	82J/2W	50°12'	114°50'	Coal		12 rdh, 3382 m; 2 HQddh, 887 m
139	Greenhills Mine (North End) (Westar Mining)		Fort Steele	82J/2W	50°08'	114°53'	Coal		23 rdh, 4381 m
139	Greenhills Mine (Bighorn pit) (Westar Mining)		Fort Steele	82J/2W	50°07'	114°53'	Coal		11 rdh, 1323 m as of Nov. 16
140	Line Creek (Lower South pit) (Crows Nest Resources)		Fort Steele	82G/15W	49°56'	114°45'	Coal		52 rdh, 6095 m; 6 ddh, 745 m
140	Line Creek Extension (Top of the Ridge) (Crows Nest Resources)		Fort Steele	82G/15W	49°57'	114°47'	Coal		22 rdh, 3032 m; 13 ddh, 1120 m
140	Line Creek Extension (2-seam pit) (Crows Nest Resources)		Fort Steele	82G/15	49°57'	114°46'	Coal		47 rdh, 2213 m
140	Horseshoe Ridge (Crows Nest Resources)		Fort Steele	82G/15W	49°57'	114°45'	Coal		15 rdh, 1944 m as of Nov. 6
141	Flathead, Howe/Howell (Placer Dome)	82G/SE-048	Fort Steele	82G/2E	49°10'	114°35'	Au		10 ddh, 1262 m; geological mapping; geochem; trenching
142	Mount Brussilof Magnesite/Rok, Mag (Baymag Mines)	82J/NW-001	Golden	82J/13E	50°49'	115°39'	Magnesite	Stratabound	34 ddh, 2700 m
143	Lussier Gypsum/United (Domtar)	82J/SW-009	Fort Steele	82J/4E	50°03'	115°31'	Gypsum	Sedimentary	32 ddh, 1125 m; approx. 15 rdh, 150 m; trenching

WEST KOOTENAY DISTRICT

144	Star/Ron (Ryan Exploration)	82F/SW-083	Nelson	82F/6W	49°27'	117°21'	Au,Ag,Cu	Porphyry?	Reverse circulation drilling; large low-grade Cu-Au deposit
145	Willa (Northair Mines/ Rio Algom/BP Canada)	82F/NW-071	Slocan	82F/14W	49°53'	117°22'	Au,Cu,Ag	Diatreme	Underground development; new portal at 1100 m elev., decline from main level
146	Great Western Group (Lectus Developments)		Nelson	82F/6W	49°27'	117°18'	Au,Cu	Volcanic	21 ddh to Dec.; 182 Kt 5.1 g/t Au
147	Kena (Tournigan Mining)	82F/SW-237	Nelson	82F/6W	49°25'	117°16'	Au,Cu	Volcanic	Diamond drilling
148	Tillicum (Esperanza Explorations)	82F/NW-234	Slocan	82F/13E	49°59'	117°44'	Au,Ag	Vein	24 ddh, 3126 m; 182 Kt 20.5 g/t Au, 2.7 Mt 2.0 g/t Au; 100 tpd mill planned
149	Strebe (Esperanza Explorations)		Slocan	82F/13E	49°59'	117°39'	Au,Ag	Skarn	8 ddh
150	Goldfinch (Granges Exploration)	82K/NW-076	Revelstoke	82K/13E	50°49'	117°32'	Au,Ag	Vein	ddh, 8719 m; 158.7 Kt 8.57 g/t Au; 50 tpd pilot mill planned
151	Spyder (K-2 Resources/Ram Exploration)	82K/NW-045	Revelstoke	82K/13E	50°50'	117°37'	Ag,Pb,Zn, Au	Vein	28 ddh, 3000 m; 33.7 Kt 3.2 g/t Au, 171 g/t Ag, 4.22% Pb, 5.77% Zn
152	Eclipse (Triple M Mining/ Ram Exploration)	82K/NW-044	Revelstoke	82K/13E	50°47'	117°36'	Ag,Au,Pb, Zn	Vein	Diamond drilling
153	John L/Maggie May (Progressive Minerals)	82K/NW-103	Slocan	82K/06E	50°28'	117°14'	Au,Ag	Vein	Diamond drilling
154	Foggy Day (Progressive Minerals/ Skyworth Resources)	82K/NW-117	Revelstoke	82K/11W	59°35'	117°21'	Au,Ag,Pb, Zn,Cu	Vein	3 ddh, 1220 m
155	King Jack (King Jack Resources)	82F/NW-136	Slocan	82F/14W	49°45'	117°21'	Au,Ag	Vein	Surface and underground drilling
156	Meteor, Payday (Yukon Minerals)	82F/NW-137	Slocan	82F/14W	49°45'	117°21'	Au,Ag,Zn, Pb,W	Vein	Drifting and underground diamond drilling
157	Alpine (Granges Exploration/ Cove Energy)	82F/NW-127	Nelson	82F/11W	49°11'	117°15'	Au,Ag,Pb, Zn	Vein	Crosscutting for underground ddh stations
158	Kenville, Granite Poorman (Algoma Industries)	82F/SW-086	Nelson	82F/06W	49°28'	117°23'	Au,Ag,Pb, Zn,Co,W	Vein	Mine rehab.; test mill under construction
159	California (Ram Explorations)	82F/SW-169	Nelson	82F/06W	49°27'	117°18'	Au,Ag,Zn, Pb	Vein	Rehab. No. 3 level
160	Athabesca (Beatty Geological)	82F/SW-168	Nelson	82F/06W	49°28'	117°18'	Au,Ag,Pb, Cu	Vein	Re-opening No. 2 portal
161	Blackcock (O'Hara Resources)	82F/SW-076	Nelson	82F/06W	49°19'	117°08'	Au,Ag,Pb, Zn	Vein	Surface drilling; new portal

TABLE 1. EXPLORATION AND DEVELOPMENT IN BRITISH COLUMBIA, 1987 (CONTINUED)
(Map numbers are keyed to Figure 2)

Map No.	Property/MINFILE Name (Owner/Operator)	Inventory No.	Mining Division	NTS	Lat.	Long.	Commodity	Deposit Type	Work Done; Remarks
162	Nugget (Gunsteel Resources)	82F/SW-040	Nelson	82F/03E	49°10'	117°07'	Au,Ag,Pb, Zn	Vein	Underground exploration, 66.4 Kt 15.4 g/t Au
163	Goldbelt (Lightning Minerals)	82F/SW-044	Nelson	82F/03E	49°09'	117°08'	Au,Ag,Pb, Zn,Cu	Vein	ddh, 2439 m; geochem.; geophys.; geological mapping; 21 Kt 13.7 g/t Au; 14.3 g/t Au, 0.5% Pb, 0.3% Zn
164	Crown (Kettle River Resources/ Noranda Exploration)		Grand Forks	82E/02	49°04'	118°35'	Au,Ag,Cu	Vein	Trenching
165	Golden Crown (Consolidated Boundary Exploration)	82E/SE-032	Grand Forks	82E/02E	49°04'	118°35'	Au,Ag,Cu	Vein	Adit, 622 m
167	Union (Sumac Ventures)	82E/NE-003	Grand Forks	82E/09W	49°34'	118°21'	Au,Ag,Cu, Pb	Heap	Heap leach operation
166	Dentonia (Kettle River Resources)	82E/SE-055	Grand Forks	82E/02E	49°10'	118°37'	Au,Ag,Pb, Zn,Cu	Vein	Underground development
168	Platinum Blonde (Placer Dome/Longreach Resources)		Grand Forks	82E/09W	49°35'	118°21'	Au,Pt,Pd, Cd	Dykes	9100 m dd program in progress
169	Standard (Silver Ridge Resources)	82F/NW-050	Slocan	82F/14W	49°57'	117°19'	Ag,Pb,Zn, Cd	Vein	Underground exploration
170	Silver Cup, Comstock (Dragoon Resources)	82F/NW-077	Slocan	82F/14E	49°53'	117°15'	Ag,Pb,Zn, Au	Vein	Mine rehabilitation
171	Skylark (Viscount Resources)	82E/SE 011	Slocan	82E/02E	49°05'	118°38'	Au,Au,Pb, Zn,Cu	Vein	ddh; underground development, 78.7 Kt 685.6 g/t Ag, 2.7 g/t Au
172	Rainbow (Dentonia Resources)		Greenwood	82E/02W	49°02'	118°48'	Au	Epithermal	Geochem.; Au in chalcedonic quartz vein
173	Abbott (Mikado Resources/ Turner Energy)	82K/NW-056	Slocan	82K/11E	50°38'	117°09'	Ag,Pb,Zn, Au	Replacement	Adit, 152 m; 66.4 Kt 294.7 g/t Ag, 1.45 g/t Au, 14.22% Zn, 11.08% Pb
174	Sullivan (Cominco)	82F/NE-052	Fort Steele	82F/09E	49°42'	116°01'	Pb,Zn,Ag, Au,Cu,Cd	Sedex	ddh
175	Wait (Normine Resources)		Fort Steele	82G/12W	49°42'	115°49'	Au	Sedex	ddh, 3000 m planned
177	Highland Surprise, Whitewater (Abermin)	82K/SW-033	Slocan	82K/03E	50°03'	117°08'	Ag,Pb,Zn, Au,Cd,Cu	Vein	Underground sampling; geochem.; geophys.; geological mapping
178	L.H. (Noranda Exploration)		Slocan	82F/14W	49°54'	117°20'	Au,Ag	Vein/ skarn	2 ddh, 795 m
179	Black Colt (Dragoon Resources)	82F/NW-011	Slocan	82F/14W	49°59'	117°16'	Ag,Pb,Zn, Au	Vein	Diamond drilling
180	Senator (Yukon Minerals)	82F/NW-164	Slocan	82F/14W	49°49'	117°26'	Au,Pb	Vein	Mine rehabilitation

181	Lucky Boy (Cominco)	82F/SW-005	Nelson	82F/03E	49°08'	117°12'	Zn,Pb	Replacement	Diamond drilling
182	Red Bird (Goldeneye Resources)	82F/SW 024	Nelson	82F/03W	49°01'	117°23'	Zn,Pb	Replacement	Diamond drilling
SOUTH-CENTRAL DISTRICT									
183	Samatosum JV (Rea Silver Zone) (Minnova)		Kamloops	82M/4W	51°10'	119°47'	Ag,Au,Cu, Pb,Zn	Volcanogenic massive sulphide	6500 m dd, 1200 m to be completed Nov., 75 ddh total planned; 1 km road construction completed
184	Rea Concession (Discovery Zone) (Rea Gold Corp./Minnova, Glitter Gold)	82M-191	Kamloops	82M/4W	51°09'	119°49'	Cu,Pb,Zn, Au,Ag	Volcanogenic massive sulphide	1450 t ore processed at Dankoe mill and treated at Mascot Gold Mines Ltd. (As-rich sulphides); plans for underground bulk sampling
185	Comstock (R. Lodmell/Lacana)		Kamloops	82L/13E	51°00'	119°33'	Au,Ag,Cu, Pb,Zn	Stratabound massive	EM, mag.; geochem.; 8 trenches
186	CK (Rea Gold/Verdstone Gold)	82M-137 224-228	Kamloops	82M/13E	51°55'	119°35'	Zn,Pb,Cu	Stratiform massive sulphide	61 ddh, 5500 m, 3050 m additional planned; IP; geochem.
187	Steep (National Resource Exploration/Discovery Consultants)		Kamloops	82M/4W,E	51°01'	119°45'	Pb,Zn,Au, Ag	Volcanogenic massive sulphide	9 ddh, 1 trench, 3 km road construction
188	Biere (National Resource Exploration/Discovery Consultants)		Kamloops	82M/5W	51°17'	119°54'	Poly-metallic	Massive sulphide	Mag., VLF-EM; geochem.; 10 ddh planned
189	Adam (Adams Exploration and Clifton Resources/ B. Spencer Engineering)		Kamloops	82M/4E	51°02'	119°37'	Poly-metallic	Massive sulphide	20 ddh, 1220 m; 1 km road; 40 trenches; IP; geochem.; 40 ddh planned
190	Cana (Esso Minerals)		Kamloops	82M/4W	51°11'	120°50'	Poly-metallic	Volcanogenic massive sulphide	11 ddh, 1575 m
191	Wiki (Esso Minerals)		Kamloops	82M/4W	51°30'	120°52'	Poly-metallic	Volcanogenic massive sulphide	1 ddh, 148 m
192	Tia (G. Belik/Nu Crown Resources)	82M-239	Kamloops	82M/12W	51°33'	119°49'	Poly-metallic	Massive sulphide	3 ddh, 300 m; 1.5 km road construction; IP, mag., VLF-EM; 10 ddh planned
193	OK (Algo Resources)		Kamloops	82M/4W	51°08'	119°51'	Poly-metallic	Massive sulphide	15 ddh, 1230 m; geological survey; geochem.; IP, VLF-EM, AEM; 5000 m dd planned (Nov.-Dec.)
194	Birk Creek (Noranda)		Kamloops	82M/5W	51°21'	119°56'	Pb,Zn,Cu, Au,Ag	Volcanogenic massive	13 rcdh, 1400 m; 6 trenches; geochem.; 20 km road construction

.pa

TABLE 1. EXPLORATION AND DEVELOPMENT IN BRITISH COLUMBIA, 1987 (CONTINUED)
(Map numbers are keyed to Figure 2)

Map No.	Property/MINFILE Name (Owner/Operator)	Inventory No.	Mining Division	NTS	Lat.	Long.	Commodity	Deposit Type	Work Done; Remarks
SOUTH-CENTRAL DISTRICT (CONTINUED)									
195	Windpass (Kerr Addison)	92P-039	Kamloops	92P/8E	50°26'	120°05'	Au	Vein	6 ddh, 2000 m; 20 trenches; mag.
196	Fortuna (BP Resources)	92P-044, 046	Kamloops	92P/1E	51P°05'	120°02'	Au	Volcanogenic massive sulphide	2 ddh, 275 m; VLF-EM, mag.
197	CM (BP Resources)		Kamloops	92P/8E	51°18'	120°07'	Cu,Au	Massive sulphide	2 ddh, 250 m; 7 trenches; mag., IP, max-min; geochem.
198	Water (BP Resources)	82M-121	Kamloops	82M/12W	51°38'	119°59'	Cu,Au,Ag	Epithermal	5 ddh, 600 m; geochem.
199	JC (Celebrity Energy)		Kamloops	82M/4W	51°08'	119°54'	Poly-metallic	Massive sulphide	6 ddh; 6 trenches
200	Cad (J.D. Graham/J.M. Ashton)	82M-222	Kamloops	82M/5W	51°17'	119°54'	Poly-metallic	Massive sulphide	3 ddh, 400 m; VLF-EM
201	Tahoola (Rat Resources/SMD Mining)	92P-008	Kamloops	92P/9W	51°35'	120°25'	Au	Intrusive associated	3 ddh, 305 m
202	MC (N. Vollo/J. Dawson)		Kamloops	92P/9E	51°34'	120°00'			5 ddh; geophys.; geochem.
203	Mosquito King (Killick Gold)	82M-007, 016,138, 139	Kamloops	82M/4E	51°02'	119°31'	Pb,Zn,Ag, Au	Massive sulphide	1.8 Kt bulk sampling; 50 tpd mill and camp built; trenching; EM
204	Bar (Minnova)	82M-062	Kamloops	82M/4W	51°23'	119°52'	Poly-metallic	Massive sulphide	10 ddh, 830 m; mapping; trenching; max-min; geochem
205	Chu Chua (Minnova)	92P-140	Kamloops	92P/8E	51°15'	120°02'	Cu,Au,Zn, Ag	Volcanogenic massive sulphide	6 ddh, 850 m; max-min; geochem.; mapping
206	Twin (Esso Minerals)	82M-020	Kamloops	82M/4W	51°08'	119°47'	Poly-metallic	Volcanogenic massive sulphide	18 ddh, 2269 m; 400 m trenching; VLF-EM
207	Kamad (Esso Minerals)		Kamloops	82M/4W	51°08'	119°49'	Ag,Pb,Zn, Au,Ba	Volcanogenic massive sulphide	18 ddh, 3026 m; VLF-EM; geochem.
208	Canoe (Outland Resources/ Technigen Platinum)	83D-14W	Cariboo	83D/14W	52°45'	119°21'			6 ddh
209	Summit (D. Tener/Azure River Gold)	83D-004	Kamloops	83D/12W	52°38'	119°51'	Au	Veins	20 rcdh, 1820 m; 3 ddh, 185 m; 15 trenches, 125 m; VLF-EM; geochem.

210	Dove/Ingrid (Redbird Gold)		Kamloops	830/11E	53°06'	119°05'	Au	Vein	7 psddh, 50 m; mag; geochem.; stripping; geological mapping
211	Reliance (C. Boitard/Menika Mining)	92J/NE-033	Lillooet	92J/15W	50°53'	122°46'	Au,Ag,Sb	Vein	38 ddh; trenching; 8 km road construction
212	Tyax (X-Cal Resources)		Lillooet	92J/15W	50°56'	122°48'	Au	Vein	ddh; 10 trenches, 500 m
213	Wayside (Chevron Resources)	92J/NE-030	Lillooet	92J/15W	50°53'	122°49'	Au,Ag,Cu, Zn	Vein	7 ddh, 1050 m, 10 trenches
214	Anderson Lake (X-Cal Resources)	92J/NE-080,081	Lillooet	92J/9W	50°41'	122°29'	Au	?	ddh
	Golden Sidewalk (Manhattan Mineral)		Lillooet	92J/15	50°46'	122°45'	Au	Vein	4 rdh, 2500 m
215	Congress (Levon Resources)	92J/NE-029	Lillooet	92J/15W	50°54'	122°46'	Au,Ag	Vein, replacement	600 m drift, 100 m raises; underground ddh, 1000 m
216	BRX (Levon Resources)	92J/NE-020-025	Lillooet	92J/15W	50°50'	122°50'	Au	Vein, replacement	70 trenches
217	Standard Creek (Armeno Resources/ Trans Atlantic Resources)	92J/NE-015	Lillooet	92J/10E	50°42'	122°37'	Au,Cu,Pb, Zn,W	Vein	14 ddh, 3660 m, 5200 m planned; adit rehab.; geochem; map., VLF-EM 6 km road construction rehab (2 x 3 m), 6 km road
218	Veritas (Coral Energy)	92J/NE-031	Lillooet	92J/15W	50°50'	122°55'	Au	Vein, replacement	8 ddh, 10 ddh planned
219	Eva-Ave (Abermin/Millenium Resources)		Lillooet	920/2W	51°02'	122°51'			1 ddh, 185 m; geochem.; mag.
220	Watson (Chevron Resources)	920-054, 056	Clinton	920/1E	51°10'	122°13'			4 ddh, 450 m; 4 trenches; mapping; geochem.
221	Relay Creek (Esso Minerals)	920-059	Clinton	920/2W	51°11'	122°56'	Au,Ag	Vein, replacement	5 rcdh, 750 m; 5 trenches; IP; geochem.
222	Rex (Poison Mountain) (Lac Minerals)		Clinton	920/2E	51°08'	122°32'	Au,Cu	Porphyry	10 ddh, 3048 m
223	Yalakom (Balsam Resources/ Howie Exploration and Development)		Clinton	920/2E	51°03'	122°33'	Au		Underground drilling
224	Taylor-Windfall (Welcome North Mines/ Taywin Resources)	920-005	Clinton	920/3E	51°06'	123°20'	Au,Ag,Cu, Pb,Zn	Epithermal	Percussion drilling, sampling
225	Galaxy (Abermin)	921/NE-007	Kamloops	921/9W	50°37'	120°25'	Cu,Au	Porphyry	7 rcdh, 367 m
226	Corona & Bob (G.D'Angelo/Tatlar Resources)	921/SE-104	Kamloops	921/7E	50°16'	120°42'	Au		4 ddh, 365 m
227	Mustang (M. Morrison/Vault Explorations)		Kamloops	921/10E	50°42'	120°43'	Au		6 pdh, 700 m

TABLE 1. EXPLORATION AND DEVELOPMENT IN BRITISH COLUMBIA, 1987 (CONTINUED)
(Map numbers are keyed to Figure 2)

Map No.	Property/MINFILE Name (Owner/Operator)	Inventory No.	Mining Division	NTS	Lat.	Long.	Commodity	Deposit Type	Work Done; Remarks
SOUTH-CENTRAL DISTRICT (CONTINUED)									
228	Kam & Jeff (Emerald Star Resources/ Canadian Nickel)		Kamloops	92I/5W	50°50'	120°51'	Au		10 dh (percussion and diamond)
229	Getty (Krain) (Robak Industries/ S. Gower)	92I/NE-038	Kamloops	92I/10W	50°35'	121°00'	Cu	Porphyry	16 dh; 6 trenches; 20 test pits
230	Thom-Fehr (MineQuest)		Kamloops	92I/10W	50°47'	120°57'	Au	Epithermal	7 rcdh, 645 m; mag., VLF-EM, IP
231	Mara (MineQuest)		Kamloops	92I/9W	50°44'	120°27'	Au,Cu,Ag, Pb	Epithermal	17 rcdh, 1489 m; geochem.; VLF-EM
232	Bonaparte (East/West) (Hughes-Lang Group/ Inter-Pacific Resources/ MineQuest)	92P-050, 159	Kamloops	92P/1W	51°03	120°25'	Au,Ag,Cu, Mo	Vein	ddh, +1000 m; geochem.; VLF-EM, mag.
232	Bonaparte (Central) (Inter-Pacific Resources/ MineQuest)	92P-050	Kamloops	92P/1W	51°00'	120°25'	Au,Cu	Vein	17 ddh, 1100 m, additional 2400 m planned; trenching
233	Ajax (Afton Operating/ Teck/Cominco)	92I/NE-012	Kamloops	92I/9	50°35'	120°25'	Cu,Au	Porphyry	77 ddh, 11 582 m
234	Makaoo (BP-Selco/Makaoo International)		Kamloops	92I/9	50°35'	120°22'	Cu,Au	Porphyry	Underground mapping, sampling
235	Elk (Fairfield Minerals)		Similkameen	92H/16W	49°50'	120°18'	Au	Vein	30 trenches; geochem.; IP
236	Hit & Miss (Canadian Nickel)	92H/NE-157	Similkameen	92H/10E	49°41'	120°12'	Au	Vein	6 ddh, 550 m approx.
237	Sadim (Laramide Resources/ I.M. Watson Associates)		Nicola	92H/10E	49°44'	120°30'	Au	Vein	15 ddh, 2072 m; VLF-EM, mag.; trenching; geochem.; mapping
238	Snowflake (Gerle Gold/Quilchena)		Nicola	92I/2	49°59'	120°34'	Au	Vein, replacement	16 ddh, 1217 m
239	Red Star (Bukara Resources/	92H/SE-067	Similkameen	92H/2E	49°09'	120°36'	Au	Replacement	35 trenches, 1100 m; geochem.; IP, VLF-EM
240	Rabbitt-Boulder (Abermin/Calais Resources/ Searchlight Resources	92H/NE-018-020, 122,123	Similkameen	92H/10W	49°35'	120°50'	Cu,Au,Ag	Vein	12 ddh, 660 m

241	Treasure Mountain (Huldra Silver)	92H/SW-016,018,019	Similkameen	92H/6E	49°25'	121°03'	Ag,Pb,Zn	Vein	10 rcdh; bulk sampled 2400 tons from trenches; 320 m drifting, 125 m raising
242	Whipsaw Creek (World Wide Minerals)	92H/SW-097	Similkameen	92H/7	49°16'	119°45'	Cu,Pb,Zn	Vein, breccia	24 ddh; 10 trenches; geochem.
243	Voight Zone (Frisco, Automatic) (Newmont Exploration of Canada)	92H/SE-018	Similkameen	92H/8W	49°20'	120°30'	Cu,Au	Vein	13 ddh, 1850 m planned; 300 m trenches; geochem.; mag., IP
244	Cahill (Consolidated Seagold)		Osoyoos	92H/8E	49°22'	120°01'	Au	Skarn	VLF-EM, mag.; 7-10 ddh planned
245	New Hope (Lacana)		Osoyoos	92H/8E	49°20'	120°00'	Au	Skarn	5 ddh, 1000 m; 10 trenches; geochem.; VLF-EM, mag.
246	Canty, French, Good Hope, Mascot Fr. (Golden North Resources/ Mascot Gold Mines)	92H/SE-059,060,064	Osoyoos	92H/8E	49°23'	120°03'	Au,Ag,Cu, Zn	Skarn	Canty: 13 ddh, 2466 m; Good Hope: 4 ddh, 595 m; Mascot Fr.: 33 underground ddh, 3735 m
247	Nickel Plate (Mascot Gold Mines)	92H/SE-062	Osoyoos	92H/8E	49°22'	120°02'	Au,Ag,Cu Zn	Skarn	Surface 69 ddh, 15758 m; underground 18 ddh, 2168 m
248	Similkameen Project: Rice, Camsell, Lost Horse, etc.) (Chevron Resources)		Osoyoos	92H/8E	49°18'	120°07'	Au	Skarn	2 ddh, 305 m; trenching, 1140 m; geochem. km), geological mapping, 1140 m road trenches;
249	Maple Leaf, Pine Knot (Noranda Exploration/ Banbury Gold Mines)	92H/SE-046	Similkameen/ Osoyoos	92H/8E	49°21'	120°08'	Au,Cu,Pb, Zn,Ag	Vein (skarn target)	8 ddh, 1676 m; geochem.
250	Fairview Camp: Morning Star, Stemwinder, Fairview, Susie, Standard (Oliver Gold/Cominco/ Highland Valley Resources)	82E/SW-006-008, 090,091	Osoyoos	82E/4E	49°12'	119°38'	Au,Ag,Si, Cu,Pb,Zn	Vein	Fairview mine: underground rehab., 23 m drifting; 6 underground dh, 418 m; mapping and sampling on 5 and 6 levels; metallurgical testing; 4 surface ddh, 525 m; Brown Bear, Susie, Standard: underground mapping and sampling; planned: drilling on all properties
251	PDE (Placer Dome/MineQuest Exploration Associates)		Osoyoos	82E/5W	49°23'	119°48'			VLF-EM; geochem.; 5-8 ddh planned
252	Oks (Fairfield Minerals)	82E/NW-025-027, 030	Osoyoos	82E/13W	49°46'	119°55'	Au,Ag,Cu, Pb,Mo		28 trenches; mag.; geochem.; 1 km road construction
253	Camp McKinney (W.E.McArthur/Ark Energy)	82E/SW-020,044-046	Greenwood	82E/3E	49°07'	119°11'	Au,Ag,Pb, Zn,Cu	Vein	8 ddh, approx. 600 m; mine rehab.
254	Yuniman (Old Digging) (TRV Minerals/Toby Creek Resources)		Osoyoos	82E/5W	49°15'	119°58'	Au,Ag,	Vein	6 ddh; 10 trenches; 1 km road contruction

TABLE 1. EXPLORATION AND DEVELOPMENT IN BRITISH COLUMBIA, 1987 (CONTINUED)
(Map numbers are keyed to Figure 2)

Map No.	Property/MINFILE Name (Owner/Operator)	Inventory No.	Mining Division	NTS	Lat.	Long.	Commodity	Deposit Type	Work Done; Remarks
SOUTH-CENTRAL DISTRICT (CONTINUED)									
255	Star of Hope (Echo Mountain Resources/Maximus Resources)	82E/SW-051	Osoyoos	82E/5W	49°17'	119°57'	Au,Ag,Pb	Breccia, vein	6 ddh, 380 m; 6 trenches
256	Orofino Mountain (G. Crooker/Grandex Resources)	82E/SW-010	Osoyoos	82E/5E	49°15'	119°41'	Au,Ag,Pb, Zn	Vein	22 ddh, 1425 m; 30 trenches; mag., VLF-EM; geochem.
257	Vault (M. Morrison/Canadian Nickel)	82E/SW-173	Osoyoos	82E/5E	49°22'	119°37'	Au,Ag	Vein, epithermal	21 ddh, 5411 m
258	North Brenda (Noranda Exploration/ Brenda Mines)	82E/NW-003,008	Nicola/ Osoyoos	82E/13W	49°54'	120°00'	Cu,Mo	Porphyry	9 ddh, 725 m; geochem; IP
259	Chaput (Quinto Mining Corp.)	82L/SE-066	Vernon	82L/7W	50°16'	118°56'	Au,Ag,Pb, Zn,Mo,Cu	Vein, shear	32 rcdh, 2130 m; 7 ddh, 900 m; VLF-EM, mag.; geochem.; metallurgical testing
260	Equesis (MineQuest)		Vernon	82L/6W	50°22'	119°26'	Au,Ag	Vein	Geochem.; geophys.; VLF-EM, IP; geological mapping; 26 km trenching; 10 ddh planned (Nov.-Dec.)
261	Kalamalka (E. Dodd/Triple Star Resources)	82L/SW-050	Vernon	82L/3E	50°12'	119°05'	Au,Ag,Cu, Pb,Zn	Vein	Underground rehab. and dd, 200 m; 6100 m underground and surface drilling planned
262	Gold Star (Brican Resources)		Vernon	82L/4E	50°14'	119°41'	Au	Vein	14 trenches; VLF-EM; geochem.; 2 ddh; planned 10 ddh total
263	Brett (Huntington Resources/ Lacana)	82L/SW-110	Vernon	82L/4E	50°15'	119°40'	Au,Ag	Vein	30 ddh, 2800 m; 8-10 trenches; geochem.; 3050 m dd total planned
264	J & L (Pan American Minerals)	82M-003	Revelstoke	82M/8E	51°17'	118°08'	Au,Ag,Pb, Zn	Volcanogenic massive sulphide	underground ddh, 1200 m; raises, 80 m; planned: 3000 m dd, 125 m raises, new adit
SOUTHWESTERN DISTRICT									
265	Valentine Mtn./Blaze (Beau Pre Explorations/ Valentine Gold)	92B-108	Victoria	92B/12W	48°31'	123°51'	Au,Ag	Veins	22 ddh; trenching; bulk sampling; geochem.; geophys.; 20 tpd pilot mill under construction
266	PF/Cornucopia, Yreka (P. Postuk/Falconbridge)	92B-038, 039	Victoria	92B/13E	48°51'	123°40'	Cu,Au,Ag	Massive sulphides	3 ddh, approx. 1150 m

267	Mt. Sicker/Lenora, Tyee (Minnova)	92B-001, 002,003, 087,088 089,099	Victoria	92B/13W	48°53'	123°47'	Au,Ag,Cu, Zn,Pb	Massive sulphides	15 ddh, 4920 m; mapping; geochem.
268	Canamera/Copper Canyon (Canamera Explorations/ Minnova)	92B-086	Victoria	92B/13W	48°52'	123°49'	Cu,Ag,Au	Massive sulphides	6 ddh, 890 m; mapping; geochem.; geophys.
269	Lara/Coronation (Abermin-Laramide Resources)	92B-102	Victoria	92B/13W	48°52'	123°52'	Au,Ag,Zn, Cu,Pb	Massive sulphides	59 ddh, 12 000 m; IP
270	Chip/Anita (Esso Minerals/ Falconbridge)	92B-037	Victoria	92B/13W	48°54'	123°57'	Cu,Ag	Massive sulphides	18 ddh, 6754 m; geophys.
271	Striker/Candy, Paula, Wendroper (Utah Mines)	92C-076 113,114, 126	Victoria	92C/16	48°54'	124°12'	Au,Cu, rhodonite	Ferruginous cherts	4 ddh; geophys.
272	Heather (Internat. Cherokee/ Minnova)	92C-127	Victoria	92C/15E, 92C/16W	48°58'	124°30'	Cu,Au	Massive sulphides, shear zone	5 ddh, 589 m; trenching; mapping; geochem.
273	Sarita/Doer, Gambler (Tranquille Resources/ Rattler Resouce)	92C-006, 032,096	Alberni	92C/15W	48°53'	124°59'	Zn,Cu,Ag, Au	Skarn	3 ddh; geophys.; geochem.
274	Fitzwater (Ladysmith Minerals/ Crew Minerals)		Alberni/ Victoria	92F/2E	49°04'	124°37'	Au,Ag,Cu, Pb,Zn	Massive sulphides, shear zone	9 ddh, approx. 1200 m; geophys.; geochem.
275	Debbie/Regina (Westmin Resources/ Westmin-Nexus Group)	92F-078	Alberni	92F/2E, 7E	49°10'	124°39'	Au,Ag,Cu	Altered shears, massive sulphide ferrunginous cherts, veins	61 ddh, 8322 m; mapping; geochem.
276	Yellow/Victoria (Angle Resources/ Reward Resources)	92F-079	Alberni	94F/2E	49°10'	124°39'	Au,Ag,Cu	Altered shear zone, veins	Approx. 7500 m ddh; mapping; geochem.; geophys.; trenching
277	Ark/HM (Ascot Resources/ Stetson Resource Management)	92F-230	Alberni	92F/6E	49°19	125°07'	Sb,Hg,Ag, Cu	Veins	3 ddh, 270 m; trenching
278	Tay Group/MT (Dalmation Resources)	92F-212	Alberni	92F/6W	49°18'	125°16'	Au	Veins	6 ddh, 485 m; geophys.
279	United Bear/Bear (International Coast Minerals/INP Exploration and Development)	92F-044	Alberni	92F/3W	49°10'	125°25'	Au,Ag,Zn,	Veins	Geophys.; geochem.; dd
280	Tommy/Tommy K (International Coast Minerals/Kerr Addison Mines)	92F-033	Alberni	92F/3W	49°10'	125°23'	Au,Ag,Cu	Veins	8 ddh, 1656 m; mapping; geochem.

TABLE 1. EXPLORATION AND DEVELOPMENT IN BRITISH COLUMBIA, 1987 (CONTINUED)
(Map numbers are keyed to Figure 2)

Map No.	Property/MINFILE Name (Owner/Operator)	Inventory No.	Mining Division	NTS	Lat.	Long.	Commodity	Deposit Type	Work Done; Remarks
SOUTHWESTERN DISTRICT (CONTINUED)									
281	Epic (Geo PC Services/ Aintree Resources)		Alberni	92F/3W	49°01'	125°30'	Ag,Cu,Au	Shears, veins	Trenching; dd; geochem.;
282	Prosper (W. Guppy/Tamara Resources)	92F-053	Alberni	92F/5	49°24'	125°45'	Au,Ag,Cu, Pb	Veins	Underground drifting; sampling
282	Cypress/Bay Creek, Cat's Eye (Utah Mines)	92F-343, 344	Alberni	92F/5W	49°16'	125°50'	Cu,Zn,Ag	Massive sulphides	5 ddh, 810 m; geophys.; geochem.; mapping
283	Beddingfield (Cominco)		Alberni	92F/5W	49°20'	125°50'			6 ddh, 1100 m; geophys.
284	Adola/June (Adola Mining/ Prophesy Developments)	92E-018	Alberni	92E/9E	49°37'	126°05'	Au,Cu,Pb, Ag	Replacement zones, veins	Trenching; ddh; geophys.; geochem.
285	Spud Valley/Goldfield, (McAdam Resources)	92L-211	Alberni	92L/2W	50°01'	126°48'	Au,Ag	Veins	15 ddh, 3000 m; underground drifting
286	Electrum/BP, Kyu, Easy, On (BP Minerals/Tayvin Resources)	92L-201, 202,203,	Alberni	92L/3W	50°10'	127°23'	Au,Ag,Cu, Zn	Veins, skarn	32 ddh, 1108 m; 45 pdh, 233 m; trenching; geochem.
287	Villalta (Canamin Resources)	92F-384	Nanaimo	92F/1W	49°06'	124°28'	Au,Fe	Manto, residual?	47 ddh, 1042 m
288	Emma (Au Resources)		Nanaimo	92F/2E	49°10'	124°35'	Au	Veins	12 ddh, approx. 1500 m; geophys. mapping; geochem.
289	Cathedral (Reward Resources/ Nexus Resource)		Nanaimo	92F/7E	49°17'	124°42'	Au	Altered shear zone	6 ddh, approx. 1500 m
290	Lupus (Proquest Resource/ Cactus West Exploration)	92F-308	Nanaimo	92F/14E	49°46'	125°10'	Au,Ag,Zn, Cu,As	Vein breccia	14 ddh, approx. 610 m; trenching; geochem.
291	Dove (J. Paquet/Westmin Resources)		Nanaimo	92F/11E, 14E	49°45'	125°13'			Airborne/ground geophys.; geochem.; dd
292	Mt. Washington/Domineer, Murex, Lakeview (Better Resources)	92F-116, 117,206, 330	Nanaimo	92F/11, 92F/14	49°45'	125°18'	Au,Ag,Cu, As	Epithermal veins, breccias	120 ddh, 8880 m; underground drifting, 300 m; bulk sampling; trenching; mapping
293	Bolivar (Rhyolite Resources)	92F-364	Nanaimo	92F/15E	49°46'	124°35'	Au,Zn	Skarn	Trenching; bulk sampling
294	Holly (Johanson et al./ Rhyolite Resources)	92F-321	Nanaimo	92F/10E	49°44'	124°34'	Au	Shear zone, veins	Trenching; bulk sampling

295	Vananda Gold/Little Billie, Cornell, Copper Queen, Texada (Ideal Cement/Vananda Gold)	92F-105, 106,107, 112,271, 395	Nanaimo	92F/10E, 15E	49°44'	124°32'	Au,Ag,Cu, Fe,Zn,W	Skarns	Trenching; mapping; geochem.
296	International Maggie Mines, War Eagle, ABC, Inidan River Copper (International Maggie Mines/Minnova)	92G/NW-024,028 042	Vancouver	92G/10W, 11E	49°38'	123°02'	Cu,Zn,Pb, Au,Ag	Sulphide veins	dd; geophys.; geochem.; mapping
297	Baldwin-McVicar (Falconbridge)	92G/NW-006	Vancouver	92G/11E	49°40'	123°01'	Cu,Zn,Pb, Ag	Massive sulphides	9 ddh, approx. 280 m; geochem.
298	Mineral Hill (R. Riepe/Tri-Sil Minerals)		Vancouver	92G/12W	49°31'	123°49'	W, garnet	Skarn	8 ddh, 742 m; trenching; mapping; bulk sampling; beneficiation tests
299	Sechelt Carbonate/MC, Peninsula Lime (Candel Developments/ Ingot Exploration)	92G/NW-031,035	Vancouver	92G/12W	49°36'	123°53'	Dolomite, marble	Sedimentary/ metamorphic	6 ddh, 583 m
300	Lang Bay/GE (Fargo Resources)	92F/137	Vancouver	92F/16W	49°48'	124°23'	Koolin, Ge,Ga	Sedimentary	Seismic; rd and dd; product quality and beneficiation studies
301	East Thurlow/White Pine, Douglas Pine (Verdstone Gold/Rea Gold)	92K-035, 036	Vancouver	92K/6W	50°27'	125°22'	Au,Ag,Cu	Veins	Trenching; geophys.; geochem.
302	Doratha Morton (New Signet Resources)	92K-023	Vancouver	92K/11W	50°31'	125°24'	Au,Ag	Veins/shear zone	Trenching; geochem.; mapping
303	Sky/Spanar (Skyrocket Exploration)	92G/SE-019	New Westminster	92G/8W	49°18'	122°23'	Au,Ag	Veins	2 ddh, 260 m; geophys.
304	Seneca/Harrison, Lov (Chevron Minerals/ International Curator Resources)	92H/SW-013,069	New Westminster	92H/5W	49°20'	121°55'	Cu,Zn,Ag, Au,Pb	Massive sulphides	diamond drilling
305	Fire Creek (Hycroft Resources/ Englefield Resources)		New Westminster	92G/16	49°47'	122°15'	Au,As,Cu	Alteration zone	diamond drilling
306	Abo/GEO, RN (Abo Resource/Kerr Addison Mines, Beme International)	92H/SW-092	New Westminster	92H/5	49°20'	121°44'	Au	Vein stockwork	182 m underground drifting; bulk sampling; pilot milling
307	North Fork (Minnova)	92H/NW-070	New Westminster	92H/12E	49°34'	121°45'	Cu,Zn	Massive sulphides	4 ddh, 680 m
308	Aufeas (Silver Cloud Mines)	92H/SW-036	New Westminster	92H/6W	49°21'	121°29'	Au,Ag,Cu, As	Veins	5 ddh, 734 m; geochem.;

TABLE 1. EXPLORATION AND DEVELOPMENT IN BRITISH COLUMBIA 1987 (CONTINUED)
(Map numbers are keyed to Figure 2)

Map No.	Property/MINFILE Name (Owner/Operator)	Inventory No.	Mining Division	NTS	Lat.	Long.	Commodity	Deposit Type	Work Done; Remarks
SOUTHWESTERN DISTRICT CONTINUED									
309	Master Ace/Newjay (Carlac Minerals/ Newjay Resources)	92H/SW-043,143	New Westminster	92H/6E	49°17'	121°08'	Au,Ag,Cu	Silicified shear zone	7 ddh, 278 m
310	Lill Group/Eagle, Lake, Boulder (Green Lake Resources	92J/SE-008,009 010	Lillooet	92J/7E	50°17'	122°36'	Cu,Zn,Ag, Au	Skarn, massive sulphides?	2 ddh
311	Nina (Silver Hill Mines)		Lillooet	92J/7E	50°21'	122°43'	Au	Veins	3 ddh, approx. 460 m
312	Snow/IXL, Copper Bay (B. Mickle/Mondavi Resources)	103G-005, 006	Skeena	103G/4W	53°11'	131°48'	Au,Cu,Ag	Veins, alteration zones	Trenching; geophys.; geochem.; mapping
313	Southeaster (Mandalla Resources)	103G-004	Skeena	103G/5W	53°17'	131°59'	Au,Ag,Pb, Cu	Veins	Trenching; geophys.; mapping
314	Cinola/Babe (City Resources Canada)	103F-034	Skeena	103F/9E	53°31'	132°13'	Au	Epithermal vein stockwork	64 rcdh, 6230 m; 30 ddh, 3447 m; 120 m underground drifting; bulk sampling; various pre-feasibility studies
315	Alexandria/Enid, Julie, Commonwealth (Charlemagne Resources)	92K-024, 025,028	Vancouver	92K/6W, 11W	50°30'	125°24'	Au,Ag,Cu	Veins/shear zone	9 ddh, approx. 825 m

NORTHWESTERN DISTRICT

By D.V. Lefebure, District Geologist
Bag 5000, Smithers, B.C. V0J 2N0
Telephone: (604) 847-7391

INTRODUCTION

Explorationists were very active in 1987 in all parts of northwestern British Columbia. The total number of mineral exploration projects increased by more than 75 per cent from 1986, with nearly twice as many drill programs. Northwestern British Columbia attracted a disproportionately high number of the exploration programs in the province because many areas of known mineral potential are relatively unexplored. The high level of exploration activity will undoubtedly result in new mine developments over the next few years.

Metals, particularly gold, drew almost all the attention. Coal exploration was limited to three properties and the only major program was carried out by Gulf Canada Resources Inc. on its Mount Klappan project. There were approximately 5 per cent fewer placer operations in the northwest in 1987 relative to 1986. Four metal mines and one asbestos mine operated in the Cassiar and Houston areas.

TRENDS

The resurgence of interest in lode gold deposits in the Atlin placer camp continued to build, with major programs by Homestake Mineral Development Co., Cream Silver Mines Ltd. and Placer Dome Inc. Exploration for motherlode-style auriferous quartz veins hosted by Cache Creek Group rocks is targeted on areas of listwanitic alteration along ultramafic contacts close to areas of known placer production. To the south, in the Tatsamenie Lake area, there was exploration on numerous properties by Chevron Canada Resources Ltd. and Stetson Resources Ltd. The prospect of an access road to the Golden Bear deposit definitely makes exploration in the Tatsamenie Lake area more attractive. The typical exploration targets are structurally controlled alteration zones (usually silicification) with gold mineralization in Paleozoic limestones and Triassic volcanics.

A new gold mining camp could soon emerge in the Iskut River area north of Stewart. Skyline Explorations Ltd. plans to mine its Stonehouse gold deposit in 1988 and the Cominco Ltd. Snip property seems destined for production with estimated minimum reserves of 997 900 tonnes at 24.0 grams gold per tonne.

Deeper drilling in the Toodoggone River area by Cheni Gold Mines Inc. is intersecting ore-grade gold-silver mineralization at depths of more than 300 metres below surface on

the Cliff Creek zone. The possibility that gold-silver deposits in the Toodoggone area extend to depths of more than 300 metres, the typical vertical extent of an epithermal precious-metal deposit, may result in larger orebodies than commonly expected. Current reserves for all zones on Cheni's Lawyers property are 1.76 million tonnes grading 6.7 grams gold and 243 grams silver per tonne.

In the Skeena arch many historic quartz veins are being re-evaluated for their precious metal potential, spurred in part by Teeshin Resources Ltd.'s success on the Dome Mountain gold property. These veins are typically hosted by Jurassic Hazelton Group volcanics or sediments. Generally more than one vein is required to establish sufficient reserves to justify the capital costs of mine development.

Companies continued to emphasize exploration of known mineral occurrences rather than "grass roots" projects. Fortunately this latter trend was counteracted by the increasing number of active prospectors. The resurgence of prospecting reflects both the greater demand for properties and the financial assistance program of up to $5000 per individual, available from the provincial government as part of the FAME program.

In the southern half of the Northwest District explorationists used the improved road access, provided by logging roads built during the 1980s, to their advantage. A number of new mineral occurrences on logging roads were staked and explored in 1987.

Almost all programs continued well into the fall and some will extend through the winter. This contrasts markedly with exploration programs ten years ago which were commonly restricted to the summer and early fall in northwestern British Columbia.

HIGHLIGHTS

Underground adit proceeding towards **Windy Craggy** orebody.

Resurgence of exploration in **Atlin area** for Motherlode-style gold deposits.

Exploration in the historic **Tulsequah mining camp** for Kuroko-type volcanogenic massive sulphides.

Golden Bear gold project poised to move towards production upon approval of road access.

Erickson Gold mine will enter its tenth year in production in 1988.

Cassiar Mining Corp. prepared to develop the underground **McDame asbestos deposit** subject to arranging financing.

Snip deposit reserves announced at 997 990 tonnes grading 24 grams gold per tonne.

Skyline Explorations Ltd. plans to put **Stonehouse gold property** into production in 1988.

Newhawk Gold Mines Ltd. establishes barge-road link between Sulphurets property and Highway 37.

Westmin Resources Limited started a pre-development program to prepare for open-pit production in 1989 from the **Big Missouri** and **Silbak-Premier** deposits.

Omineca Mining Road extension completed to the Lawyers property in the Toodoggone River area.

Cheni Gold Mines Inc. starts mine construction at **Lawyers deposit** and plans production in 1989.

Bell and **Equity Silver mines** increase profitability due to rising copper and silver prices.

Regional Geochemical Survey release of Smithers and Whitesail Lake areas identifies new anomalies and includes gold analyses for first time.

SUMMARY OF EXPLORATION ACTIVITIES

MINERAL

A total of 322 notices of work for mineral exploration were submitted in 1987 for the Northwest District. Almost one-third of these programs involved significant drilling or underground development. A summary of the 99 drilling or development projects is presented in Table 1.

Tatshenshini River Area

In the extreme northwest part of the province Geddes Resources Ltd. and St. Joe Canada Inc. explored for volcanogenic massive sulphide targets in Triassic sediments and basalts. Geddes is currently driving a 2100-metre adit to test the gold zone in the huge Windy Craggy deposit (1) and Geddes also drilled three holes on the Tats massive sulphide showing (2).

East of the Tatshenshini River Stryker Resources Ltd. and Freeport Resources Inc. continued to explore on their Low Herbert and Grizzly Heights showings (4) for volcanogenic massive sulphide deposits and auriferous quartz veins.

Plate 1. A view of the Windy Craggy portal showing the access road on the Tats Glacier in the background. The 2100-metre adit is being advanced to test the gold zone in the 300-million-tonne volcanogenic massive sulphide orebody. Photography courtesy of Geddes Resources Ltd.

Atlin Region

Mesothermal gold veins were virtually the only exploration target in the Atlin region. Total Erickson Resources Ltd. investigated the northwest-trending Engineering and Double Decker quartz veins hosted by Jurassic Laberge Group argillites at the old Engineer Mine (5). In the Atlin placer camp the Pictou (6), Yellowjacket (7), Spruce Creek (8) and Lakeview (9) lode gold properties were drilled. Homestake Mineral Development Co. has announced the best results to date with definition of a mineralized zone extending 225 metres along strike with ore-grade intercepts to 90 metres,including one intersection of over 2.4 metres of 24.3 grams gold per tonne. Cream Silver Mines Ltd. also drilled a skarn deposit on Ruby Mountain (10), one of a number of similar deposits in the area.

Plate 2. Looking west towards Atlin along Pine Creek. Homestake's Yellowjacket gold property is located beneath the placer gravels near the centre of the photograph.

Tulsequah River - Tatsamenie Lake Area

Cominco Ltd. and Northwind Ventures Ltd. explored for Kuroko-type massive sulphides associated with Triassic Stuhini Group felsic volcanic rocks in the Tulsequah River area. Past production from the Tulsequah Chief mine included 1 to 3 grams gold per tonne with the silver, lead and zinc. Cominco drilled deep holes and completed an extensive geological mapping program to establish the stratigraphic sequence in the Tulsequah Chief area (11). This type of information is critical to future systematic exploration of this mining camp.

To the east, in the Tatsamenie Lake area, the Golden Bear project (17) moved to the development stage (see below). Chevron Canada Resources, with joint venture partners Diamet Minerals Ltd. and Lightning Creek Mines Ltd., diamond drilled 40 holes on five properties searching for gold deposits. Most of the drilling was done on the Nie property (13) which lies on the same major, north-trending fault system that controls the Golden Bear ore deposit.

Cassiar Mining Camp

All three mines in the Cassiar mining camp were explored for new reserves in 1987. Cassiar Mining Corporation completed more underground development (see Development) and a feasibility study on the McDame asbestos deposit (19). Immediately to the east at the Taurus mine (21), Taurus Resources Ltd. drilled to test auriferous quartz veins in the Snowy Creek and Sable adit areas. Late in the year the Hopeful adit, was started several hundred metres west of the Sable adit to provide underground access to several mineralized quartz veins.

In its ninth year of operation, Total Erickson Resources Ltd. continued an aggressive gold exploration program on its 220-square-kilometre property (20). Trenching, soil sampling and geological mapping were used to identify drill targets on the Cusac, Jade, Hunter, Table Mountain, Main and Katherine veins.

To the north of Cassiar near the Yukon border, Reg Resources Corp. drilled the Silverknife silver-lead-zinc deposit (18) located on claims adjacent to the Midway deposit. South of Cassiar and west of Dease Lake, Equity Silver Mines Ltd. drilled a large alteration zone adjacent to a placer gold occurrence on Thibert Creek (22).

Stikine Area

The Stikine area north of the Iskut River saw renewed interest in exploration as Long Reach Resources Ltd., Lac Minerals Ltd., Radcliffe Resources Ltd. and Gulf International Minerals Ltd. all completed diamond-drilling programs on gold-bearing veins. In the 1970s this area attracted attention for the large copper-gold porphyry deposits such as Schaft Creek and Galore Creek. Current work is focused on vein systems typically hosted by Mesozoic volcanics peripheral to porphyry-style mineralization. On the McLymont property (27), Gulf International intersected high-grade gold mineralization including 28.1 grams gold per tonne over 3.96 metres. Values such as these, coupled with the summer 1988 release of Regional Geochemical Survey results for NTS map sheet 104G, should spur future exploration in the area.

IskutRiver Area

Hector Resources Ltd., Skyline Explorations Ltd., Cominco Ltd., Tungco Resource Corp., Taiga Consultants Inc., Winslow Gold Corp., Western Canadian Mining Corporation and Teck area. Underground development work was carried out by Skyline and Inel Resources Ltd. Typically the target was pyritic shear zones or quartz veins hosted by Mesozoic sediments and volcanics. On Johnny Mountain, Skyline continued to develop its Stonehouse (Reg) deposit (29, see Development) and announced plans to mine

in 1988. On the adjacent Snip property (30), Cominco Ltd. and Delaware Resources Ltd. carried out an extensive drilling program to follow up 1986 intersections. The Twin zone, a calcite-quartz-biotite vein, has been followed for 450 metres and is open to depth. Magna Ventures Ltd. continued underground development to test the Q17 vein on the Doc property (37), located approximately 55 kilometres northwest of Stewart. There are a number of quartz veins with free gold in Hazelton Group sediments on the claims.

Stewart Mining Camp

Numerous companies explored the belt of Hazelton Group volcanic and sedimentary rocks between the Unuk River and Stewart. In the Sulphurets Creek area, Teuton Resources Corp., Newhawk Gold Mines Ltd., Catear Resources Ltd., Western Canadian Mining Corporation and Bighorn Development Corp. were active. Newhawk, Catear and Bighorn explored silver-gold veins and stockworks. During 1987 Newhawk spent $5.1 million to increase the proven reserves (see Table 2) and to build a road and barge link to its property (39). Teuton Resources discovered a gold-bearing skarn on Treaty Creek (38). Western Canadian Mining appears to have found a gold-copper porphyry deposit on the Kerr property (41) including one intersection of 86.7 metres which averages 0.95 per cent copper and 0.34 grams gold per tonne.

In the Stewart mining camp, companies directed their exploration efforts towards well known, precious metal bearing veins. Westmin Resources Limited, Silbak Premier Mines Ltd. and Canacord Resources Inc. started a pre-development program on the Silbak Premier (46) and Big Missouri (45) properties, both past gold-silver producers (see Development). Royal Scot Resources Ltd. drilled underground in the Scottie Gold mine (43). Tenajon Silver Corp., Noranda Exploration Co. and Joutel Resources Ltd. also completed major exploration programs in the area.

Portland Canal Area

The same favourable Hazelton Group lithologies extend south from Stewart into the Portland Canal area. In the Alice Arm silver camp, Dolly Varden Minerals Ltd. extended underground workings to an area between the Dolly Varden (49) and North Star mines, both past producers. To the north, in the Kitsault valley, Cominco Ltd. drilled a shear zone with silver values. Cominco was also exploring the Anyox area (51) for volcanogenic massive sulphide deposits with contained precious metals.

Hecate Lowlands

Imperial Metals Corporation, Trader Resources Ltd. and Gold Ventures Ltd. completed exploration programs

looking for high-grade gold deposits characterized by strong structural control, on the islands south of Prince Rupert. At the Yellow Giant (54), the most advanced project, new reserves of 90 700 tonnes at 17.4 grams gold per tonne were announced for the Tel zone and plans for underground development were put on hold. Trader also examined the Skarn property (55), an ultramafic complex with magnetite layers on the east side of Banks Island, for its vanadium, titanium and platinum potential.

Inland from the Hecate Lowlands, Falconbridge Limited continued to explore for volcanogenic massive sulphide deposits in the Ecstall River area and at the Scotia deposit in roof pendants in the Coast plutonic complex.

Terrace-Kitimat Atea

In the Kitimat area, BP Resources Canada Ltd. (58) carried out a small drill program on a silicified zone with anomalous gold values. North of Terrace, Terracamp Developments Ltd. (56) and Cannon Explorations Ltd. (57) explored auriferous quartz veins on the shores of Kitsumkalum Lake. AJM Metals Ltd. drilled a similar target on the Lucky Boy property north of the Zymoetz River.

Toodoggone River Area

Gold-silver epithermal to mesothermal veins occur along several major northwest-trending regional faults in the Early Jurassic Toodoggone volcanics. The Al (59), Mets (60), Metsantan (61), Moosehorn (62), Lawyers (64), Silver Pond (65), Marmot (71), Perry Mason (66) and Chappelle (67) properties are all located on, or near, the best developed regional fault. Energex Minerals Ltd., Manson Creek Resources Ltd., Cheni Gold Mines Ltd. and Multinational Mining Inc. all published new reserves for their deposits in 1987 (see Table 2). The most exciting results were ore-grade intersections on the Cliff Creek zone on the Lawyers property over a vertical depth of more than 300 metres.

Drilling programs for veins were also completed on the Discovery, Golden Stranger (63), Shasta (68), Brenda (69) and Wrich (72) properties. The Acapulco skarn (70) was drilled by Cheni Gold Mines and returned significant intersections of massive magnetite and chalcopyrite with associated gold values. Over $10 million was spent on exploration in the Toodoggone River area in 1987. The Omineca Mine Road extension was completed providing ground access to the Sturdee airstrip, Baker mine and Lawyers deposit. Cheni Gold Mines started site preparation for mining of the Lawyers deposit in 1978 (see Development). South of the Toodoggone and west of Bear Lake, Prolific Petroleum Ltd. and Noranda Exploration Co. drilled precious metal prospects.

Plate 3. A view towards the east-northeast of the mill site on the Lawyers property in the Toodoggone with the AGB zone on the ridge immediately behind it.

Hazelton Area

At the old Red Rose mine Freeport Resources Inc. (80) tested the down-dip extension of the quartz vein which contains pyrite, chalcopyrite, wolframite, scheelite, ankerite, tourmaline, apatite and ferberite. The mine originally produced tungsten and copper with significant gold values reported, but not recovered.

Skeena Arch

At the Bell mine (75) on Babine Lake the search for additional ore reserves continued. Noranda drilled east of the Newman fault, inside and outside the open pit, in an attempt to locate a faulted extension of the copper-gold porphyry orebody. The drilling did not locate new ore reserves. Five kilometres to the east of Bell mine, Equity Silver Mines Ltd. drilled a VLF-EM conductor on the Red property (77) and intersected semi-massive pyrrhotite and pyrite over a 30 to 50-metre-wide zone in graphitic mudstones.

On Dome Mountain (82) Teeshin Resources Ltd. drilled on the Boulder vein, Boulder extension, Argillite zone and Chisholm vein. Teeshin drifted along the Boulder vein, opening three sections totalling 130 metres of mineralization averaging 17.1 grams gold and 80.9 grams silver per tonne diluted to a 1.5-metre mining width. Current reserves on the Boulder zone are 257 000 tonnes grading 14.95 grams gold and 96.0 grams silver per tonne. Total Erickson Resources Ltd. drilled on the adjacent Free Gold property. Near Walcott, Lacana Mining Corporation tested the gold potential of skarn mineralization on the Canyon property (84) hosted by rhyolite flows and volcaniclastics. Immediately to the north Lornex Mining Corporation drilled a silver-gold-lead-zinc soil anomaly associated with the Barr molybdenum occurrence. Across the valley on Grouse Mountain, Dafrey Resources Inc. drilled a similar mineral occurrence for gold on Mineral Hill (85).

Base metal veins with precious metal values attracted attention for their locally high gold values. Exploration programs were carried out at the Victoria, Cronin, Topley (86), Richfield (87) and Silver Queen (89) properties. Expenditures on the Silver Queen property exceeded $1 million with extensive underground development, 65 drill holes, metallurgical tests and environmental studies. Houston Metals Corp. completed a total of 165 metres of drifting in ore, including four new veins not previously accessed underground. A decline was started from the tailings pond area to provide access to a gold-silver-zinc ore shoot on the No. 3 vein below the 2600 level. Approximately 2440 metres of drilling on the new Camp vein added substantial tonnage to the reserves (see Table 2).

Equity Silver Mines Ltd. continued its aggressive drilling program at the mine site (91). High-grade intersections beneath the Southern Tail and North zones were followed up with more drilling which has established the potential for underground reserves. Underground exploration planned for 1988 will evaluate the potential of these zones. Equity Silver and joint venture partner Teck Corporation drilled on the Gaul property (92) to the south of the minesite, concentrating on the Superstition zone.

Adjacent to the Equity property, Faraway Gold Mines Ltd. and Normine Resources Ltd. explored in areas of extensive overburden for Equity-style transitional deposits. In 1986 Faraway Gold located a broad zone of disseminated sulphides, principally pyrite, on the Sam property (90) with some silver intersections over several metres grading more than 50 grams per tonne with 0.25 to 0.45 per cent copper. The 1987 drilling extended the altered zone and intersected more metre-wide replacement zones with pyrite, tetrahedrite, sphalerite and galena. Normine Resources intersected similar mineralization in a previously unexplored area. These results may spur more exploration for transitional silver-copper-antimony deposits in the Houston area.

Plate 4. Bear zone portal on the Golden Bear property of North American Metals B.C. Inc. and Chevron Canada Resources Ltd.

In Cassiar there was underground development on the McDame deposit (19) and a mine feasibility study completed by the Cassiar Mining Corporation. The deposit would be mined from underground and replace the open pit as a source of asbestos. Current reserves at McDame are 62 million tonnes of asbestos with the deposit open to the south (see Table 2). Cassiar Mining has announced plans to develop the deposit, subject to arranging financing.

Skyline Explorations Ltd. completed camp construction, upgraded the airstrip, started mill construction and drove a lower adit in preparation for underground mining of the Stonehouse (Reg) gold-silver deposit (29) in 1988. The mine is to be supplied by aircraft from Wrangell, Bob Quinn and Terrace. Measured, indicated and inferred reserves at the end of November 1987 were 851 400 tonnes grading 25.0 grams gold per tonne, 29.1 grams silver per tonne and 0.76 per cent copper.

TABLE 2
COMMODITIES AND RESERVES FOR MAJOR MINERAL AND COAL PROJECTS IN NORTHWESTERN BRITISH COLUMBIA

	Property	Commodity	Reserves
1	Windy Craggy	Cu,Co,Au,Zn	317.5 Mt @ 1.5% Cu, 0.08% Co, including 1.8 Mt @ 10.3 g/t Au
17	Golden Bear	Au,Ag	Bear zone - 625.4 kt @ 18.63 g/t Au
19	McDame	Asbestos	32.4 Mt @ 5.57% grade; P_1, P_2
29	Reg (Stonehouse)	Au,Ag	851.4 kt @ 25.0 g/t Au, 29.1 g/t Ag and 0.75% Cu (P_1, P_2, P_3)
36	Snip	Au,Ag,Zn	1.1 Mt @ 24.0 g/t Au
39	Sulphurets	Au,Ag	West zone - 513.2 kt @ 11.04 g/t Au, 711.8 g/t Ag (P_2) - new reserves to be announced early in 1988
43	Scottie	Au	26.3 kt @ 18.5 g/t Au (P_1), 68.0 kt @ 18.5 g/t Au (P_2)
45	Big Missouri	Au,Ag	68.0 kt @ 3.60 g/t Au, 1.58 Mt @ 29.49 g/t Ag
46	Silbak Premier	Au,Ag	5.61 Mt @ 2.19 g/t Au, 81.94 g/t Ag
54	Tel (Yellow Giant)	Au	90.7 Kt @ 17.4 g/t Au
59	Al	Au	239.5 kt @ 8.51 g/t Au - new reserves to be announced early in 1988
60	Mets	Au	A zone - 160 kt @ 11.3 g/t Au (P_2)
64	Lawyers	Au,Ag	1.76 Mt @ 6.7 g/t Au and 243 g/t Ag
67	Chappelle	Au,Ag	45.4 kt @ 20.13 g/t Au, 176.91 g/t Ag and 0.75% Cu (P_1, P_2, P_3)
82	Dome Mountain	Au,Ag	256.7 kt @ 14.95 g/t Au, 96.0 g/t Ag
89	Silver Queen	Ag,Pb,Zn,Au Cd,Ga?,Ge?	524 kt @ 3.7 g/t Au, 258 g/t Ag, 1.49% Pb, 6.53% Zn, 0.49% Cu (P_1, P_2)
98	Mt. Klappan	Anthracite	1000 Mt
99	Telkwa	Bituminous coal	50 Mt

P_1 - proven; P_2 - probable; P_3 - inferred

Morice Lake-Tahtsa Lake Area

Newmont Exploration of Canada Limited, Westbank Resources Ltd., Lansdowne Oil and Minerals Ltd. and Alpine Explorations Ltd. drilled in the Morice Lake and Tahtsa Lake areas looking for precious metal bearing veins. Newmont's New Moon property (94) is the most advanced project with drilling completed on the Misty Day, North, North East and Scree zones. The mineralized zones are quartz-carbonate veins, stockworks and broad silicified zones with pyrite and base metals hosted by Hazelton Group volcanic and volcaniclastic rocks. One of the better intersections from the North zone graded 0.51 per cent lead, 0.98 per cent zinc, 346 grams silver and 3.63 grams gold per tonne over 4.4 metres.

COAL

On its Klappan property (98) in the Bowser Basin south of Dease Lake, Gulf Canada Resources Inc. completed diamond drilling in the eastern area of the proposed open pit and the waste dump area. The drilling was intended to better delineate ore reserves and assist in mine planning. An additional 24 holes were drilled to explore northeast of the proposed pit. Gulf submitted its Stage III report which was under review by the Mine Development Steering Committee at the end of 1987. In the Hazelton area Atna Resources Ltd. (99) drilled three holes to test bituminous coal seams in Skeena Group sediments.

PLACER

The most active placer area in the northwest district was Atlin with a total of 52 notices of work including several programs on Otter, Pine, and Spruce creeks. Near the British Columbia/Yukon border on Squaw Creek, placer miners found the largest gold nugget, 2.3 kilograms, found during this century in Canada. A total of 49 notices of work were filed in the Liard Mining Division, up 11 per cent from 1986. Dease Creek, Hyland River, McDame Creek and Rosella Creek were the busiest placer areas in the division.

DEVELOPMENT

Approximately 140 kilometres west of Dease Lake, North American Metals B.C. Inc. and Chevron Canada Resources Ltd. continued with underground development work on the Golden Bear deposit (17) discovered in 1981. The companies submitted their Stage I report in 1987 and received approval-in-principle for the combination open-pit and underground mine from the Environment and Land Use Committee (ELUC) of the provincial cabinet in October. Current reserves for the Bear zone are 625 400 tonnes grading 18.63 grams gold per tonne. The mine will require an access road, which must be approved by the ELUC, to go into production at 350 tonnes per day.

Plate 5. A view looking northwest over Johnny Mountain flats towards the Iskut River. Airstrip for the Stonehouse gold deposit of Skyline Explorations was under construction in August, 1987. Camp and ore zones are in the centre of the photograph.

Near Stewart, Westmin Resources Ltd., Silbak Premier Mines Ltd. and Canacord Resources Inc. agreed to a $4 million pre-development program of site preparation for a mill, road building and initial work on hydro-electric power development. Current reserves for the Big Missouri (45) and Silbak Premier (46) deposits are listed in Table 2. Both mines would be open-pit operations with the mill located at the Silbak Premier. Initial production is scheduled for 1989.

The Lawyers silver-gold deposit (64) of Cheni Gold Mines Inc. in the Toodoggone River area should be in production in 1989. Cheni Gold Mines completed the access road, prepared the mill site, started to drive the haulage adit on the AGB zone and drilled new reserves on the Cliff Creek zone in 1987. Underground production is planned from the AGB, Cliff Creek and Duke's Ridge zones.

PRODUCERS

Three mines in the Cassiar area and two in the Houston area operated in the northwestern district in 1987. These mines employed a total of 1010 people and played an important economic role in the region. Cassiar Mining Corporation maintained production levels at approximately 100 000 tonnes of asbestos per month from its open-pit operation. The mine was closed for 5 weeks in July and August. The waste-to-ore ratio was roughly 1.3:1. The open pit should be mined out in 1990. Immediately to the east the Taurus underground gold mine operated at a rate of 136 tonnes per day with an average grade of 6.9 grams gold per tonne. All production is from the deeper levels of the mine. At the Erickson Gold mine, also in the Cassiar camp, the Eileen, Michelle and Vollaug veins were mined from the Vollaug and Cusac underground mines. Some open-pit ore was produced from the Cusac area. The mill operated at approximately 250 dry tonnes per day, with an average head grade of 13.75 grams gold and approximately 7 grams silver per tonne.

On Babine Lake the Bell open-pit mine continued to produce 15 000 tonnes of ore per day for a total production of approximately 4.9 million tonnes at an average grade of 0.50 per cent copper and 0.106 grams gold per tonne. Approximate mine reserves are 14 million tonnes with an expected mine life of 2 years.

The Equity Silver mine south of Houston operated at a milling rate of 10 000 tonnes per day with a feed grade of 0.35 per cent copper, 103 grams silver and 0.98 grams gold per tonne. The open-pit production came from the Main zone. Current reserves in the Main zone are approximately 10 million tonnes grading 111.6 grams silver per tonne, 1.01 grams gold per tonne and 0.34 per cent copper. Current reserves in the Main and Waterline zones will last until approximately 1992.

EXPLORATION OPPORTUNITIES

Despite the high levels of exploration activity in the Northwestern District there still many unexplored areas with excellent mineral and coal potential. Significant exploration opportunities are:

Polymetallic volcanogenic massive sulphide deposits in the Tatshenshini River, Cry Lake and Prince Rupert areas.

Silver-lead-zinc manto deposits similar to the Mount Hundere and Midway deposits in the Cassiar thrust and fold belt.

Gold veins on major structures in the Hecate Lowlands south of Prince Rupert.

Precious metal deposits in Jurassic volcanic and sedimentary rocks (typically Hazelton Group) extending north from the

Stewart area to the Stikine River and south from the Toodoggone River area to Whitesail Lake.

Follow up of Regional Geochemical Survey results from the 1987 Whitesail Lake release and planned 1988 release for the Iskut River, Telegraph Creek, Sumdum and Tulsequah map sheets.

CENTRAL DISTRICT
E.L. Faulkner, District Geologist
1652 Quinn Street, Prince George, B.C. V2N 1X3
Telephone: (604) 565-6125

INTRODUCTION

There was an increase in mineral exploration activity in all mining divisions in 1987. Mineral notices of work, totalling 153 at the end of October, were up 28 per cent from 1986, while drilling programs, at 57, were up 39 per cent. A notable feature was the large numer of follow-up programs, partly the result of encouraging results obtained earlier in the season, and partly due to pressures to spend flow-through funds under the more favourable tax rules of 1987.

Placer operations decreased 12 per cent from 1986 levels despite the improved price of gold in 1987. The decrease, however, was mostly in the number of testing and recreational programs.

Although precious metals in all deposit types once again dominated exploration targets, for the first time in several years there was some interest in base metal deposits. Following is a summary of exploration trends by region, with a mention of some of the major exploration programs. For locations and details of properties see Table 1 and Figure 2.

CARIBOO

The majority of programs in the district were once again concentrated in the Quesnel trough, with targets being gold in volcanogenic massive sulphides, alkali porphyry and porphyry-related deposits, and phyllite-hosted gold deposits and veins.

Placer Dome Inc. continued drilling of the QR alkali-porphyry-related gold deposit (103), bringing it a step closer to a mining decision. Published ore grade and tonnage have been increased to 998 000 tonnes grading 7.2 grams per tonne gold.

Gabriel Resources Inc. again completed a major drilling and trenching program on its G South property (101), with mixed but encouraging results from the Ahbau Creek zone. Gold occurs with massive to disseminated sulphides that appear to be related to shear zones in the host volcaniclastics, and which may have been remobilized.

A significant development in the exploration for basal phyllite-hosted gold deposits has been indications from preliminary tests that this type of mineralization may be heap leachable. Eureka Resources, Inc. extended the known size of the main Jay zone at their Frasergold property (102), and Pundata Gold Corporation extended areas of known mineralization and discovered others on its CPW property (106) and adjacent claims.

CARIBOO MOUNTAINS

Results of exploration for "sedex" base metal - silver mineralization in the Upper Hadrynian and Lower Paleozoic metasediments of the Cariboo Mountains have been disappointing. Interest was raised by barium and multi-element anomalies revealed in the 1986 Regional Geochemical Survey for NTS 93G and 93H. Barite mineralization has been found, but without significant other mineralization. However, improved access to this area has led to the discovery of apparently conformable base metal - quartz replacement vein deposits with significant precious metal values. Noranda Exploration Co. Ltd./International Rhodes Resources Ltd. joint venture reported several encouraging "ore grade" intersections from the AK property (107), hosted by low-grade arenaceous metasediments, and Gibraltar Mines Limited drilled the May Be property (114), a persistent base metal vein, with some good silver values, in black calcareous sediments.

OMINECA

Rapidly improving access has again led to increased prospecting and exploration. Targets were volcanogenic massive sulphides, porphyry-related precious metals and mesothermal veins. Exploration techniques included soil, basal till and lithogeochemistry, and the re-examination of areas of porphyry copper mineralization.

Imperial Metals Corporation continued drilling at the Takla Rainbow property (120) to establish the size and continuity of an extensive gold-bearing shear zone in a border phase of the Hogem batholith. Noranda has identified a number of scattered areas of massive to disseminated gold-bearing pyrite mineralization in tuffaceous sediments and andesitic flows on its large TAS property (119).

FRASER PLATEAU

A number of companies, including Newmont Exploration of Canada Limited, Lac Minerals Ltd., Lornex Mining Corporation and and Kerr Addison Mines Limited, were active on the Fraser Plateau and interest in this area is increasing. Targets were typically either Mesozoic inliers in the Tertiary basalt cover with multi-element geochemical anomalies, or areas of silicified and brecciated Tertiary basalts. Exploration techniques have included lake sediment, soil and lithogeochemistry and re-examination of areas of minor copper mineralization. Both target types have to date returned generally low but sometimes widespread gold and silver values associated with minor pyrite, chalcopyrite or both, and with potential for heap-leach processing.

COAST RANGE MARGINAL BELT

Several companies searched for epithermal precious metal deposits in the interior marginal belt of the Coast Range intrusive complex, especially in Kingsvale volcanic and volcaniclastic rocks. Exploration techniques included examination of gossans and areas of hydrothermal alteration, and re-examination of gold-quartz vein deposits and porphyry-related precious metal mineralization.

Kleena Kleene Gold Mines Ltd. continued an exploration adit at the Apex (Perkins Peak) property (111) and Lord River Gold Mines Ltd. attempted to increase the reserves at the Pellaire (Lord River) mine (117) by drilling and underground drifting and sampling. Welcome North Mines Limited drilled a number of alteration targets near the old Taylor Windfall mine (118), while to the east, a Westmin Resources Limited joint venture continued to test several large areas of gossan, hydrothermal alteration and multi-element geochemical anomalies in a major drill program on the Taseko-Pallisades property (113).

OPERATING MINES

Most of the district's operating mines have benefited from higher metal prices. The re-opening of the Endako molybdenum mine at a reduced mill rate of 10 000 tonnes per day has been highly successful. The Gibraltar copper-molybdenum mine benefitted from the production of copper from the electrowinning plant which has increased from 11 tonnes per day to near capacity of over 15 tonnes per day. Mosquito Creek Gold Mining Company Limited continued to mill occasional batches of ore and has started an adit which will connect with the old Island Mountain mine workings. Blackdome Mining Corporation's gold and silver mine operated at over 180 tonnes per day. Ore reserves were maintained with a major program of drilling and underground development concentrated on the southwest extension of the No. 1 and No. 2 vein systems.

INDUSTRIAL MINERALS

A new vermiculite discovery, hosted by a probably late Jurassic pluton, was staked near Fort St. James (Mag and Frank claims). Aurun Mines Ltd. produced over 2000 tonnes of perlite from its Frenier quarry, and there were contract shipments of limestone from two quarries in the Central District.

NORTHEASTERN DISTRICT
A. Legun, District Geologist
Box 578, Charlie Lake, B.C. V0C 1H0
Telephone: (604) 787-3450

COAL EXPLORATION

Coal exploration activity in 1987 was at the same level as in 1986 with four notices of work submitted. As in 1986 most of this activity was close to the two minesites, Teck Bullmoose and Quintette Coal. Total exploration drilling stood at 9557 metres in 82 holes at the end of October. This is very similar to 1986 when 9372 metres wwere drilled in 86 holes. Almost all activity was in the vicinity of the Quintette mine which accounted for 9117 metres of the drilling.

A summary of exploration statistics is presented in Table 1.

QUINTETTE COAL LTD.

The Transfer (130) and Grizzly (131) deposits were the focus of Quintette's 1987 efforts outside the main pit areas.

The Transfer deposit is a relatively symmetrical anticline found 2 to 3 kilometres west of the transfer point of the overland conveyor. Exploration work involved 8 diamond-drill holes, 36 rotary-drill holes and 3 adits from which 5 bulk samples were taken (F, G, J, K_1 and K_2 seams). Reserves in the Gates Formation are in the range of 10 to 12 million product tonnes. A few holes on the west limb of the Transfer anticline were drilled into the Gething Formation and intersected an interesting thickness of coal.

The Grizzly structure, a continuation of the Shikano anticline, lies on the north bank of the Murray River, immediately above the M-19 gravel pit and parallel to the western side of the overland conveyor. Exploration work involved 4 diamond-drill holes, 20 rotary-drill holes, and 3 adits from which 4 bulk samples were taken (F, G, J and K seams). A reserve in the range of 3 to 6 million product tonnes is indicated.

Both of the above programs were supported by a FAME grant. Results of the exploration programs supported interpretations based on 1986 work. Coal seam continuity was good and no significant faulting was found. F seam was found to be a little ashy on the east limb of the Transfer anticline. Total mineable thickness of coal is approximately 13 metres, somewhat less than that found in the main Mesa pit.

Perry Creek (132) is a new exploration area east of Fortress Mountain approximately 9.5 kilometres northwest of the

Quintette minesite. Gates Formation coal measures are preserved in a synclinal structure with one shallow-dipping limb. The last work done in the area was in 1974. In 1987, 5 rotary-drill holes intersected 7.5 metres of coal (5.5 metres J_1, and 2 metres J_2). J_1 and J_2 seams correspond to A and B seams of Teck Bullmoose mine to the north. The area is close to the road and rail line and may contain anything from 1 to 10 million tonnes of reserves.

TECK CORPORATION

The only exploration activity at Teck's Bullmoose mine (134) relates to Gething Formation coal measures near a proposed dump area. Eight rotary-drill holes have been placed on the 1560 road at the southwest end of the pit. The only seam of significance intersected is the Bird, with a composite thickness of about 3 metres. Work by the writer indicates potential for near-surface preservation of this seam along the axis of the syncline (underlying the pit) across I Creek.

OPERATING MINES

At the Quintette mine, production at the newly opened Shikano pit began in earnest in September, complementing that at the Mesa and Wolverine pits. Quintette will produce approximately 5 million tonnes of metallurgical coal in the calendar year, with about 70 per cent of the production from the Mesa subpits, about 20 per cent from Wolverine and 10 per cent from Shikano.

Development and production drilling totalled 19 920 metres as of the end of October. Even with projection to year's end, this will be considerably reduced from 1986 levels when 35 084 metres were drilled. This is a natural consequence of the structure and seam geometry being now well defined. The Mesa Extension area, in particular, saw a reduction in development drilling (19 996 metres to 7108 metres).

The Bullmoose mine will produce 1.7 million tonnes of metallurgical coal in its contract year. Five seams (A to E) are mined with about 60 per cent of production coming from the thick and extensive A and B seams.

COAL POTENTIAL, NORTHEAST DISTRICT

Four oil and gas wells located adjacent or within the Foothills coal belt record apparent thick intervals of coal within the lower part of the Gething Formation. Though the coals at the well sites are too deep for surface exploitation, nearby fold structures bring the stratigraphic interval to surface (for example, Waterfall Creek anticline). Coal boreholes in the vicinity did not penetrate the stratigraphic interval of the coal

in the wells. For further information see Legun in Geological Fieldwork, 1987 (British Columbia Ministry of Energy, Mines and Petroleum Resources, Paper 1988-1).

The logs of other oil and gas wells, within or adjacent to the Foothills coal belt, hold significant information in regard to coal seams in the Fort St. John Group and Minnes Group and their use for targeting exploration areas is encouraged.

MINERAL EXPLORATION

Five notices of work were submitted in 1987 which indicates some interest in the mineral potential of the Peace River district where virtually none existed before.

Probably the most significant mineral property under exploration is the Cay (135). Beaty Geological Ltd. conducted geologic mapping, geochemical and geophysical surveys, and drilling on limestone breccias near the contact between the Stone and Dunedin formations. Galium and germanium associated with barite-lead-zinc mineralization are the commodities sought. The Cay property was targeted after a 2.5-year program of reconnaissance of lead-zinc showings in northeastern British Columbia and elsewhere. At the time of writing, analytical results from core sampling of two different areas along strike are pending. Mineralization is known to occur as a thin brecciated stratabound interval and in a crosscutting breccia.

Near Mount Burden, immediately north of Williston Lake, Northgate Exploration Limited conducted a modest drill program on the Coral property (136), a lead-zinc prospect occurring near the Stone-Dunedin contact. Core from only one of the 10 diamond-drill holes was mineralized.

Other programs included trenching and blasting at Bonanza Creek near the old Churchill Copper mine by Shangri-La Minerals Ltd. in search of cobalt mineralization, and drilling for gold in Proterozoic quartzites by Alina International Industries Ltd. (137).

INDUSTRIAL MINERALS

The Baker Creek limestone quarry was inactive in 1987 except for shipments from the stockpile. Similarly there was no production from the barite quarry at Fireside.

At the time of writing Mandusa Resources Ltd. proposes to explore for china clay in a Tertiary outlier at Coal River, where thin coal measures are preserved.

SOUTHEASTERN DISTRICT
D.A. Grieve, District Geologist
Bag 1000, Fernie, B.C. V0B 1M0
Telephone: (604) 423-6884

INTRODUCTION

The gold exploration boom experienced throughout the province in 1987 was noticeable to at least a minor extent in the southeastern district, which is more traditionally known for coal and industrial minerals. Notably, Placer Dome Inc. (formerly Dome Exploration Canada Limited) followed up previous exploration of syenite intrusions in the Howell Creek area, southeast of Fernie, with a diamond-drilling program.

The total amount of coal exploration drilling will be very close to the 24 000-metre total of 1986. A more negative indicator is that all coal exploration programs were conducted within the immediate vicinity of existing operations. The FAME program again had a positive impact on coal exploration in the district; FAME has supported 81 per cent of total exploration drilling to date, down from 90 per cent in 1986.

MINERAL EXPLORATION

The total number of notices of work in 1987 was 14, up one from 1986. These break down as follows: precious metals, 4; base metals, 2; gypsum, 4; magnesite, 1; barite, 1; and 2 are for small programs of unclear objective. Three of the larger programs are listed in Table 1. These include drilling programs for industrial minerals in the vicinity of Baymag Mines Co. Ltd. (142) and Domtar Inc. (143) minesites (magnesite and gypsum, respectively). Both represent efforts to increase mineable reserves. The third program included in Table 1 refers to work by Fox Geological Consultants, on behalf of Placer Dome, on two adjacent properties in the Howell Creek area (Flathead River drainage basin) known as Flathead and Howe (141). The company had previously found gold geochemical anomalies associated with altered syenite intrusions; one anomalous zone on the Flathead property was drilled this year.

COAL EXPLORATION

All coal exploration programs are listed in Table 1. Of note, Westar Mining Ltd. continued exploring for high-volatile coals (seam 16 and higher) at the Greenhills mine (139), especially in the northern part of the property. Crows Nest Resources Ltd. (140) was active at two proposed pit sites in the Line Creek Extension and also in the new Lower South pit (see Coal Developments) and on Horseshoe Ridge. Fording Coal Ltd. continued to focus on Eagle Mountain (138), its major long-term production site.

COAL DEVELOPMENTS

Westar Mining received Stage I approval for its controversial "west side" Greenhills development known as Falcon pit. Stripping of rock began in September within a portion of the pit which is covered by pre-existing permits. A total of 1.7 million tonnes of 1-seam coal is scheduled to be removed over a 3-year period.

Production began this year from the Lower South pit, adjacent to the main pit at Line Creek. Current production is entirely from 8 seam.

WEST KOOTENAY DISTRICT
G.G. Addie, District Geologist
310 Ward Street, Nelson, B.C. V1E 5B4
Telephone: (604) 354-6125

INTRODUCTION

Exploration activity in the West Kootenay District increased by at least two-thirds over 1986, based on the number of permits of work applied for. Some 75 mining and exploration companies are active in the district, with work directed almost entirely toward precious metal targets. Significant results have been obtained in a diversity of geological environments with the main emphasis on gold-bearing quartz veins and silicified zones in Rossland volcanic rocks. Almost every known gold occurrence in the Nelson district is now being explored.

GOLD-BEARING VEINS

Granges Exploration Ltd. has had considerable success on the Goldfinch property (150) north of Camborne, optioned from Windflower Mining Ltd. Four gold-bearing veins are now being tested from surface by three diamond drills. Approximately 6100 metres of drilling have been completed and reserves are quoted at 158 725 tonnes with an average grade of 8.57 grams per tonne gold. Plans to build a 50-tonne-per-day pilot mill for bulk testing are in hand. The strong vein systems are related to a major fault zone, the Camborne fault, which extends many kilometres to the southeast and has many mineral showings clustered along it. The Dorothy vein carries high-grade visible gold where conspicuous tension veins are developed in the wallrocks. A second mineralized shoot has been discovered on the Dorothy vein, 150 metres north of the area tested last year, and significant veins have been found in both the footwall and hangingwall.

On the Camborne fault system, south of the Incomappleux River, K-2 Resources Inc. (formerly Sunshine Columbia Resources Limited) and Ram Exploration Ltd. have drilled 28 holes, totalling 3000 metres, to increase reserves on the Spyder vein (151). The drill-indicated tonnage is now 33 700 tonnes grading 3.2 grams per tonne gold, 171 grams per tonne silver, 4.22 per cent lead and 5.77 per cent zinc. The lower drill holes are intersecting more pyritic mineralization, thought to be similar to that on the Goldfinch property.

Triple M Mining Corporation and Ram Exploration have also been drilling to increase reserves on the adjoining Eclipse property (152), where mineralization is localized along north-trending carbonate-altered shear zones in metavolcanic and metasedimentary rocks of the Jowett and Broadview formations. Mineralization is described as coarse-grained argentiferous

galena, sphalerite and pyrite, with lesser tetrahedrite and free gold, in a gangue of quartz and siderite.

In the Slocan mining camp, King Jack Resources Ltd. has rehabilitated the King Jack, Joan and Duplex mine portals (155) and is drilling from surface and underground to test veins carrying argentite and visible gold. Also in the Slocan camp, Noranda Exploration Company Limited has an option on the L.H. mine (178) and drilled two holes totalling 795 metres during July and August. One hole cut an intercept of 1.4 metres grading 15 grams per tonne gold; the other cut a shear zone containing 40 per cent combined arsenopyrite, pyrite and pyrrhotite, and assaying 2.57 grams per tonne gold over 1 metre. East of Slocan, Yukon Minerals Corporation has re-opened the Payday (Meteor) gold-silver mine (156).

North of Nelson, Granges Exploration Ltd. has optioned the Alpine mine (157) from Cove Energy Corporation. A new access road has been completed and a diamond-drilling program has been started. Eight to 10 holes are planned, with a possible $850 000 program funded by Cove Energy Corporation on a flow-through basis.

South of Nelson, the Kenville mine (158) has been rehabilitated by Algoma Industries and Resources Ltd. and a small mill is under construction. This mine produced considerable free gold in the past, and high-grade scheelite mineralization has recently been discovered. In the same area, Ram Exploration Ltd. has rehabilitated the California mine (159) and Beatty Geological Ltd. is re-examining the Athabaska mine (160). All three of these old mines lie along northwest-trending magnetic linears that may reflect shear zones cutting both Nelson plutonic rocks and Rossland volcanics.

In the Ymir mining camp, O'Hara Resources Ltd. is exploring the Blackcock mine (161) where high-grade gold and silver mineralization is associated with massive base metal sulphides in fissure-controlled veins. The granodiorite wallrocks are often strongly silicified and mineralized with auriferous pyrite.

In the Sheep Creek camp, Gunsteel Resources Incorporated (162) has been successful in developing new ore. Reserves now stand at 66 400 tonnes with an average grade of 15.4 grams gold per tonne. On the neighbouring Goldbelt mine (163), Lightning Minerals Inc. has completed 2440 metres of surface diamond drilling and quotes reserves of 21 000 tonnes grading 13.7 grams per tonne gold, 14.3 grams per tonne silver, 0.5 per cent lead and 0.3 per cent zinc.

In the Grand Forks area, Kettle River Resources Ltd. and Noranda Exploration have optioned the Crown property (164) from Consolidated Boundary Exploration Limited and have trenched on a broad gold geochemical anomaly. An assay of 34.28 grams per tonne gold over 1.8 metres was obtained in one trench. On the adjoining

Golden Crown property (165), Consolidated Boundary has completed a 622-metre adit to explore a zone of seven parallel gold-bearing veins in diorite. Kettle River Resources has also continued underground exploration in the Dentonia mine (166) north of Greenwood. Sumac Ventures Inc. has started a successful heap-leach operation at the old Union mine (167) north of Grand Forks; a total of 5000 grams of gold and 150 000 grams of silver has been recovered from 13 600 tonnes of tailings and dump material. The company plans to leach an additional 85 000 tonnes in the coming year. Total probable reserves of tailings, dump rock and underground ore are quoted as 99 300 tonnes with a grade of 3.4 grams gold and 143.9 grams silver per tonne. Small amounts of platinum and palladium have been recovered in tests. Placer Dome Inc. and Longreach Resources Ltd. are exploring the adjacent Platinum Blonde claims (168) for platinum group metals and have begun a 9100-metre diamond-drilling program.

GOLD-BEARING SILICIFIED ZONES IN ROSSLAND VOLCANIC ROCKS

The Rossland volcanic rocks are geochemically anomalous in gold. Gold concentrations are found in silicified zones associated with intrusions into the volcanic terrane. Although mineralization controls are undoubtedly complex, and as yet poorly understood, the possibility of finding large, low-grade gold deposits appears good.

Lectus Developments Ltd. (146) is drilling a silicified zone at the contact between Rossland andesites and the Silver King porphyry intrusion near Nelson. The first hole yielded visible gold and drilling will continue through December. Other companies and prospectors are active in areas to the south and southeast. Southwest of Salmo, Falconbridge Limited is drilling a silicified zone in Rossland volcanics believed related to Tertiary Coryell intrusions.

DIATREME DEPOSITS

Northair Mines Limited proposes to bring the Willa property (145) near Silverton to production in 1988. Plans call for a 500-tonne-per-day mill to produce 995 200 grams of gold, an equal amount of silver, and 1.4 million kilograms of copper annually. A new portal was established at the 1100-metre elevation during 1987 and two new potential ore zones have been found, but are not included in reserves.

GOLD-BEARING SKARN DEPOSITS

Esperanza Explorations Ltd. continues to enjoy success on its Tillicum Mountain property (148) where drill-indicated reserves are now quoted at 182 000 tonnes with an average grade of 20.5 grams gold per tonne. This figure includes 45 500 tonnes

grading 34.28 grams per tonne Twenty-eight holes, totalling 3126 metres of drilling, were completed in 1987. The West Ridge zone, located close to the present workings and estimated to contain 2.7 million tonnes grading 2 grams gold per tonne, will be explored for higher grade shoots during the coming year. Installation of a 100-tonne-per-day mill, with a crushing capacity of 150 tonnes per day, is also planned in 1988.

Esperanza has also acquired the Strebe property (149) several kilometres to the east on Hailstorm Mountain, where visible gold is present in an extensive skarn zone that appears identical to that on Tillicum Mountain. Eight diamond-drill holes have been completed. All holes intersected the gold-bearing skarn zone and five yielded intercepts with visible gold.

EPITHERMAL GOLD DEPOSITS

Kettle River Resources Ltd. and Dentonia Resources Ltd. are exploring for epithermal gold mineralization on the Rainbow property (172) near Midway. A vein of chalcedonic quartz has yielded gold analyses up to 7.3 grams per tonne over a width of 30 centimetres and is associated with a strong arsenic-antimony geochemical anomaly in soils.

PORPHYRY(?) GOLD DEPOSITS

Ryan Exploration Company Ltd., the Canadian exploration arm of U.S. Borax, describes its Star and Ron claim (144) groups near Nelson as having many of the characteristics of a porphyry deposit. The claims cover an extensive gold geochemical anomaly in soils (100 ppb range) over the contact between "pseudodiorite" and Rossland volcanic rocks. A total of 2286 metres of reverse circulation drilling has been completed over the last three years.

SILVER-LEAD-ZINC DEPOSITS

Dickenson Mines Limited has been successful in increasing ore reserves in its Silvana mine at Sandon and in its epxloration of the adjacent Carnation mine. Ore reserves in the Silvana mine are 56 000 tonnes with an average grade of 442.3 grams silver per tonne, 6.55 per cent zinc and 4.9 per cent lead.

At the Standard mine (169) in the Slocan camp, Silver Ridge Resources Inc. has driven into a silver-lead-zinc zone projected downwards from the No. 7 level. A number of veins are present and will be explored by diamond drilling. Silver Ridge is also renovating the Ottawa mill at Slocan.

Dragoon Resources Ltd. has rehabilitated the adits at the Silver Cup - Comstock mine (170) on Fennell Creek east of Silverton. A narrow vein of massive galena has been found and is reported to assay 6857 grams per tonne silver. The dumps are considered to be suitable for feed for the company's mill at Ainsworth, jointly owned with Mikado Resources Ltd.

In the Greenwood area, the Skylark Resources Ltd. - Kettle River Resources Ltd. joint venture has been successful in blocking out ore in the Skylark mine (171). Reserves are quoted as 78 700 tonnes with an average grade of 685.6 grams silver and 2.7 grams gold per tonne, with an additional 27 300 tonnes of possible reserves. A 460-metre decline has been driven into the newly discovered Serp zone which carries higher gold values; one drill hole intersected 4.1 metres of mineralization assaying 14.8 grams gold per tonne.

CARBONATE-HOSTED REPLACEMENT DEPOSITS

Mikado Resources Ltd. and Turner Energy & Resources Ltd. have driven a new adit 152 metres on the Abbott zone (173) in the Trout Lake area. Reserves in this replacement deposit in the Badshot limestone are quoted as 66 400 tonnes with an average grade of 294.7 grams silver and 1.45 grams gold per tonne, 14.22 per cent zinc and 11.08 per cent lead.

SEDEX DEPOSITS

Ore reserves at the Cominco Ltd. Sullivan mine (174) are 26.3 million tonnes grading 6.9 per cent zinc, 4.6 per cent lead and 34.28 grams per tonne silver. Diamond drilling in 1987 totalled 1774 metres and a 2000-metre exploration hole has been started on Mark Creek, north of the Kimberley fault.

Normine Resources Ltd., Anglo Canadian Mining Corporation and Victoria Resource Corporation have a 3000-metre drilling program on the Wait property (175) northeast of the Sullivan mine. They have discovered geochemically anomalous amounts of gold in the Aldridge Formation which warrant further investigation.

PLACER DEPOSITS

Queenstake Resources Ltd. has enjoyed a successful year with its placer mining operation on the Moyie River, recovering 22 175 grams of gold. This compares with 5660 grams recovered last year.

SOUTH-CENTRAL DISTRICT
R.E. Meyers, District Geologist
101, 2985 Airport Road, Kamloops, B.C. V2B 7W8
Telephone (604) 828-4566

INTRODUCTION

Mineral exploration in south-central British Columbia reached an all-time high in 1987. The number of exploration projects increased by 52 per cent and the number of drilling (and/or underground) projects is up by 109 per cent.

TRENDS AND HIGHLIGHTS

Although precious metals remain the most sought-after commodities, the historical mesothermal and epithermal vein targets took a somewhat lower profile to silver and gold-bearing volcanogenic massive sulphides and skarn gold deposits.

Since the discoveries of the Rea Gold deposit (184) in 1983 and the Silver zone (Samatosum Mountain) (183) in 1985, exploration for polymetallic precious metal-bearing massive sulphide deposits within the Devono-Mississippian Eagle Bay assemblage and Permian Fennell Formation has been steadily increasing. In excess of 35 000 metres of drilling were completed in the area during 1987, with gross exploration expenditures estimated at well over $5 million. As a consequence, the area will, in all likelihood, see new mine production at Samatosum Mountain before 1990.

In the Hedley camp, Mascot Gold Mines Ltd.'s (247) success, together with new metallogenic models and prospects resulting from current field research, has stimulated a great deal of exploration directed toward Nicola-hosted skarn gold targets.

A new epithermal gold "province" is beginning to take shape in the Okanagan region. With the recent discoveries of the Vault deposit (257) near Okanagan Falls and the Brett deposit (263) northwest of Vernon, the Tertiary volcanic sequences which at one time were looked upon as "cover rock" are now being recognized as excellent potential host rocks for high-level "hotspring-type" gold mineralization.

Elsewhere in the district, the Upper Triassic Nicola Group is again the focus of exploration for gold. Several medium-sized programs were initiated in 1986 and are continuing through the 1987-1988 field seasons.

The current copper revival has prompted several companies to take another look at the economics of bulk tonnage deposits, particularly where significant amounts of gold are present. This

will be a major factor in determining the future of the Afton mine and other alkaline intrusive-associated deposits.

SUMMARY OF EXPLORATION ACTIVITIES

ADAMS LAKE AREA

Most activity was focused west of Adams Lake, with major operators being Minnova Inc., Esso Minerals Canada, BP Canada Inc. and Noranda Inc., together with such junior companies as Rea Gold Corporation, National Resource Exploration Ltd., Celebrity Energy Corp. and Glitter Gold Mines Ltd. Southeast of Adams Lake, Clifton Resources Limited and Adams Exploration Inc. completed an extensive drilling program on the Adam property, while at the Mosquito King property (203), Killick Gold Company Ltd. continued with bulk sampling and mill testing of lead-zinc sulphides from their ongoing trenching program.

The potential remains high for new discoveries in the region. National Resource Exploration intersected a new zone on the Steep claims (187) and a number of sulphide occurrences are distributed throughout Eagle Bay stratigraphy on the Adams Plateau, many of which have not been systematically tested by drilling.

SHUSWAP COMPLEX

Northeast of Clearwater, within the Shuswap metamorphic complex, Rea Gold and Verdstone Gold Corporation are completing a major drilling program on the metasediment-hosted CK (186) lead-zinc prospect. Further north, Azure River Gold Ltd. has completed the first phase of a major program to evaluate the Summit (209) gold property.

BRIDGE RIVER GOLD CAMP

The Gold Bridge - Bralorne district again saw extensive exploration effort on many of the prime historical properties. At many localities new approaches and models are being developed, with input and direction from the high level of field and academic research currently ongoing in the region.

The most active projects in the camp include the Armeno Resources Inc. Standard Creek (217) project, the Levon Resources Ltd. Congress (215) project, the Chevron Canada Resources Ltd. Wayside (213) project and the Menika Mining Ltd. Reliance (211) project. The Standard Creek and the Congress properties have had extensive underground development work. In addition to the Lower Howard zone, Levon plans to drift on the Upper Howard zone and also on the Lou stibnite zone. Both zones occur within Upper

Triassic Pioneer Formation pillow lavas and are spatially associated with Tertiary feldspar porphyry pulaskite dykes.

Elsewhere in the camp, Chevron completed extensive surface work and drilling on the Wayside property, optioned from Amazon Petroleum Corp. It is concentrating on a section of Bralorne diorite which is possibly a faulted extension of the main intrusion that hosts the Bralorne and Pioneer mines.

TYAUGHTON-YALAKLOM AREA

North of Bridge River, in the Relay Creek area, several companies continued exploration for epithermal gold mineralization in Cretaceous volcanic rocks. Westmin Resources Limited, Esso Minerals Canada and Byron Resources Ltd. completed a major drilling program on their Taseko Joint Venture, and Welcome North Mines Limited carried out percussion drilling on the Taylor-Windfall (224) property. To the east, at Poison Mountain (Rex claims, 222), Lac Minerals Ltd. drilled for bulk-tonnage porphyry copper-gold mineralization.

Current field research in the region suggests that some of the better precious metal targets are likely to be close to the Late Cretaceous to Early Tertiary feldspar porphyries intruding the Cretaceous (Kingsvale) volcanic package, specifically where mercury, arsenic and antimony anomalies occur with open-space carbonate-silica veining and alteration.

KAMLOOPS REGION

Activity in the central part of the district focused primarily on extending the potential of copper-gold porphyry +mineralization in the Jurassic Iron Mask batholith and on Tertiary epithermal targets in the Kamloops Group volcanic rocks.

Southeast of the main open pit, Afton Operating Corp. (Teck) is continuing an extensive diamond-drilling effort on the Ajax (233) and Comet-Davenport zones with the aid of a FAME grant. A number of other copper-gold targets are being examined by such operators as BP Canada Inc. and Abermin Corporation on the Makaoo (234) and Galaxy (225) properties, and there remain several significant targets within the Iron Mask that are worthy of examination.

MineQuest Associates continued work on the Mara (231) and Thom-Fehr (230) properties, funded by the Hughes-Lang Group. Both claim groups are significant epithermal targets. To the north, on the Bonaparte claims (232), Inter-Pacific Resource Corp. (MineQuest) is working to further delineate gold mineralization discovered in 1986 in Nicola volcanic rocks.

NICOLA VOLCANIC BELT

South of Kamloops, several companies are concentrating their exploration efforts on gold-bearing quartz-sulphide veins occurring in Upper Triassic Nicola volcano-sedimentary sequences. Many such targets appear to be associated with faults, with localized but strongly developed propylitic alteration.

Laramide Resources Ltd. discovered the Sadim property (237) near Missezula Mountain in 1986 and has since completed a substantial program of surface work and diamond drilling. Immediately to the south, Canadian Nickel Co. Ltd. operated a similar project on the Hit and Miss claims (236) along the Summers Creek fault zone, while to the north, near Aspen Grove, Gerle Gold Ltd. obtained several encouraging drill intersections on the Snowflake property (238).

PRINCETON-TULAMEEN AREA

Newmont Mines Limited's exploration division has revived interest in copper-gold potential of the Voigt stock (243), northeast of the Copper Mountain deposit. The Voigt zone mineralization is hematite and carbonate dominant and contrasts with the siliceous pyritic ore at Copper Mountain.

In the Tulameen district, west of Princeton, Huldra Silver Ltd. has been successful with surface exploration and bulk sampling of a fault-associated high-grade silver vein system (241). The mineralization cuts argillites, arkoses and tuffaceous sediments of the Jurassic Dewdney Creek and Cretaceous Pasayten Groups. Elsewhere in the area, Newmont completed surface mapping and lithogeochemical sampling at Grasshopper Mountain, at the north end of the Tulameen ultramafic complex. It has defined weak, but consistent platinum-bearing chromite segregations within massive dunite. D.K. Platinum Corporation has also been exploring for platinum group metals and, although a few other minor programs have been ongoing, the potential for platinum in the area has yet to be fully realized.

HEDLEY

Mascot Gold Mines Ltd. continued extensive drilling on the French, Canty and Good Hope properties (246), while its new parent company, Lacana Mining Corporation, explored the New Hope claims (245) east of the minesite. Noranda Exploration Ltd. continued work on Banbury Gold's Maple Leaf property (249), concentrating on the contact zone of a Hedley diorite stock. South of Hedley, Chevron Minerals completed preliminary work and limited drilling on its Similkameen project (248). Reports are that skarn mineralization there is likely to be below 200 metres depth.

OKANAGAN

In the Peachland area Fairfield Minerals Ltd. completed extensive surface exploration on the Oka (252) and Elk gold-skarn prospects. Both properties occur in pendants of calcareous Nicola sediments within the Pennask batholith and lie on projected extensions of the Triassic Hedley Formation carbonate units.

Further south, near Okanagan Falls, Canadian Nickel continued a deep drilling program on the Vault (257) epithermal gold prospect, discovered in 1986. The deposit occurs in porous trachytic tuffs of the Tertiary Lower Marama Formation. Gold values up to 8 grams per tonne have been intersected at depths below 250 metres. The property lies northwest of the Dusty Mac mine, another well-known epitnermal gold deposit in the area.

In the Fairview gold camp (250), interest has been re-established by the efforts of two Vancouver-based junior exploration companies that had assistance from FAME grants. Oliver Gold Corporation has completed surface and underground programs at the Fairview mine, and Highland Valley Resources Ltd. drove a 365-metre exploration adit on the Brown Bear (Stemwinder) claims. Results from both projects have been modestly encouraging and Oliver Gold, which recently acquired a controlling interest in Highland Valley Resources, plans to continue the Stemwinder project over the winter.

In the northern Okanagan region Huntington Resources Inc. and Lacana Mining jointly operated a major drilling and trenching program on the Brett gold prospect (263), discovered by heavy mineral sampling and prospecting in 1983-84. Gold-silver mineralization in shear zones and quartz veins occurs with intense clay and silica alteration that crosscuts tuffaceous volcanic rocks of presumed Tertiary age. The discovery hole, drilled in 1987, intersected 5.2 metres grading 25 grams per tonne. A similar style of mineralization occurs on Brican Resources Ltd. Gold Star property (262), immediately west of the Brett claims. Brican carried out surface work and a drilling program on newly defined gold targets.

At the north end of Okanagan Lake, MineQuest Associates is also following up surface work with drilling on its Equesis (260) gold-silver prospect. This is another mesothermal vein target in an Upper Triassic Nicola volcano-sedimentary package.

The Quinto Mining Corp. continued drilling and bulk sampling on its Lumby project (259) Plateau gold zone. Plans are to test-mill the sample material at the Chaput mill on the Lumby property. Mineralization in the Plateau zone occurs in a carbonaceous shear zone in Triassic Slocan Group rocks. The company is at Stage I in the Mine Development Review Process.

REVELSTOKE AREA

In contrast with other areas, activity in the eastern part of the district was down slightly from previous years. At the J & L deposit (264), Pan American Minerals Corp. is continuing with underground drilling and bulk sampling. The company's main objective is to overcome the high-arsenic metallurgical problem using the Cashman process, recently developed by the United States Geological Survey.

OPERATING MINES

Mascot Gold Mines officially opened the Nickel Plate mine in August 1987. The company is operating from three pits, the South (Bulldog) pit, the Central (Sunnyside) pit and the North (Nickel Plate) pit, with published ore reserves of 9.0 million tonnes grading 4.56 grams per tonne gold. Production rate is 2450 tonnes per day with a 9:1 stripping ratio.

At Logan Lake, Highland Valley Copper Ltd. began operation of a $62-million in-pit crushing and conveying system in the fall of 1987. The system operates from the Valley pit, which produces about 84 per cent of current production, with the remainder made up from the Lornex pit. The new installation boosts daily production by about 6 per cent to 120 000 tonnes per day and will replace the operation of several high-cost haulage trucks.

In the Okanagan region, Brenda Mines Ltd. continued operations throughout 1987 at a rate of 30 000 tonnes per day. Exploration drilling programs were completed in the south wall of the main pit and on the North Brenda claims (258), with the aid of a FAME grant. At the present production level, the current pit reserves will be near depletion by mid-1989.

Newmont's Copper Mountain operation maintained a steady production rate of about 20 000 tonnes of ore per day, grading 0.43 per cent copper. Appreciable amounts of gold and silver are also recovered in concentrate. With the improved trend in copper prices, there is potential to extend the mine life substantially.

At the Afton mine, near Kamloops, production at 7700 tonnes per day continues from the Pothook zone, where reserves stand at 1.54 million tonnes, grading 0.4 per cent copper. The main Afton pit closed in 1987 and the Pothook zone will be depleted by May 1988. However, if the aggressive exploration efforts on the Ajax project are successful, operations could continue well beyond 1988.

Teck Corporation's Highland Bell mine at Beaverdell operated throughout 1987 at about 100 tonnes per day. The company completed a FAME-assisted underground drilling program in 1987, which produced encouraging results and generally improved the ore reserve situation.

SOUTHWESTERN DISTRICT
H.P. Wilton, District Geologist
200, 756 Fort Street, Victoria, B.C. V8W 3A3
Telephone: (604) 356-2838

INTRODUCTION

Mineral exploration activity in the Southwestern District in 1987 has increased by approximately 33 per cent over the 1986 level, as measured by the number of projects identified. Increased expenditures on major drilling programs and underground bulk sampling at some of the more advanced projects suggest that a final tally of total expenditures on mineral exploration in 1987 will show an increase close to 50 per cent over 1986. Gold continues to dominate as the main target commodity at most of the projects and is being hunted with considerable success in a variety of geological settings. Other metals are, in most cases, being investigated only as co-products or pathfinders to the all-important gold values.

SICKER BELT

The largest concentration of effort and expenditure is still in the Sicker Group of Paleozoic volcanic and sedimentary rocks of southern Vancouver Island. The traditional target in the Sicker belt has been polymetallic massive sulphides with significant precious metal values, in felsic volcanic rocks, as exemplified by the Myra Creek deposits at Buttle Lake and the former mines at Mount Sicker.

Discovery of the Coronation zone on the Lara property (269) in 1984 by Abermin Corporation and Laramide Resources Ltd. revitalized interest in a search for these Kuroko-type deposits in the Sicker Group. The Abermin-Laramide team has significantly added to the 820 000 tonnes of reserves indicated at the beginning of 1987 and has recently announced its intention to test the Coronation zone underground with a decline in 1988. The most significant development in the Sicker belt in 1987, however, has been the spectacular success on the Debbie property (275) near Port Alberni by the joint venture of Westmin Resources Limited and the Nexus group of companies. They have reported numerous impressive gold intersections from three separate zones which represent three different mineral deposit types. One is an extensive fault-controlled alteration zone, the second is a ferruginous chert horizon with an associated quartz-vein stockwork in basaltic rocks, and the third is a system of mineralized quartz veins. The Debbie project gives every indication of being one of the most important new discoveries in British Columbia within the past year.

Of great significance also is the fact that Westmin Resources Limited has dramatically demonstrated that the Sicker belt contains a variety of deposit types in addition to the traditional Kuroko type. It is expected that the main Sicker belt between Duncan and Port Alberni will continue as a hot exploration area through 1988 with a new perspective in which the Myra formation rhyolites (now included in the McLaughlin Ridge Formation) are no longer the only target, but rather the Sicker belt is gold country and "gold is where you find it."

TERTIARY GOLD DEPOSITS

Other gold targets that have captured the interest of many companies and prospectors on Vancouver Island are the mesothermal to epithermal quartz veins and vein-breccia occurrences that are known or suspected to be of Tertiary age. The most important of these at present is the Mount Washington property of Better Resouces Ltd. (292). A total of 120 diamond-drill holes and 300 metres of underground drifting was completed in 1987 and the company is expected to announce a significant increase to the 214 000 tonnes of drill-indicated reserves calculated at the end of 1986. The gold-silver-arsenic-copper mineralization occurs mainly in tabular, siliceous vein-breccia zones which are localized in a series of flat-lying fractures superimposed on a complex Tertiary eruptive system centred on, but not limited to, Mount Washington.

Other active gold camps in which the mineralized quartz veins are hosted by rocks of Tertiary age include Zeballos and Kennedy River. It is now becoming evident that Tertiary mesothermal and epithermal quartz vein and breccia systems occur throughout Vancouver Island and nearby islands. Furthermore, widespread quartz-ferrocarbonate-altered shear zones and faults, such as the Mineral Creek zone on the Debbie property, are probably of Tertiary age and represent an associated class of epithermal gold targets. The latter type of presumed Tertiary epithermal mineralization may occur throughout Vancouver Island as well as on Texada and Quadra islands and the nearby mainland coast.

Elsewhere, Tertiary gold mineralization is being sought in the Graham Island gold belt on or adjacent to the Sandspit fault. The focus of attention is the Cinola property (314) where City Resources (Canada) Ltd. undertook an aggressive drilling program early in the year and are anticipating a feasibility decision very shortly.

Another property which is at an advanced stage of exploration and showing promise of development in the near future is the Abo property (306) of Bema International Ltd. and Kerr Addison Mines Limited near Harrison Hot Springs. Mineralization consists of a network of gold-rich quartz veins within a Tertiary quartz diorite stock.

INDUSTRIAL MINERALS

The Sunshine Coast between Sechelt and Powell River has emerged in 1987 as a possible centre of industrial mineral development. The Lang Bay property (300) of Fargo Resources Ltd., which had previously been explored for germanium and gallium in low-grade coals, has been reactivated as a very promising prospect for the recovery of kaolin from the associated sandstones. Just north of Sechelt, Tri-Sil Minerals Inc. have identified a significant reserve of open-pittable wollastonite with industrial garnet as a possible by-product (298). Adjacent to the wollastonite property is a potentially important dolomite resource owned by Candol Developments Ltd. (299).

CONCLUSION

In summary, 1987 has been a very successful year for exploration and prospecting in the Southwestern District. The activity is still focused very heavily on gold, new discoveries have been made, there are at least five properties that appear to be likely producers in the near future and new geological models are emerging. There are many reasons to expect this accelerating activity to continue through 1988.

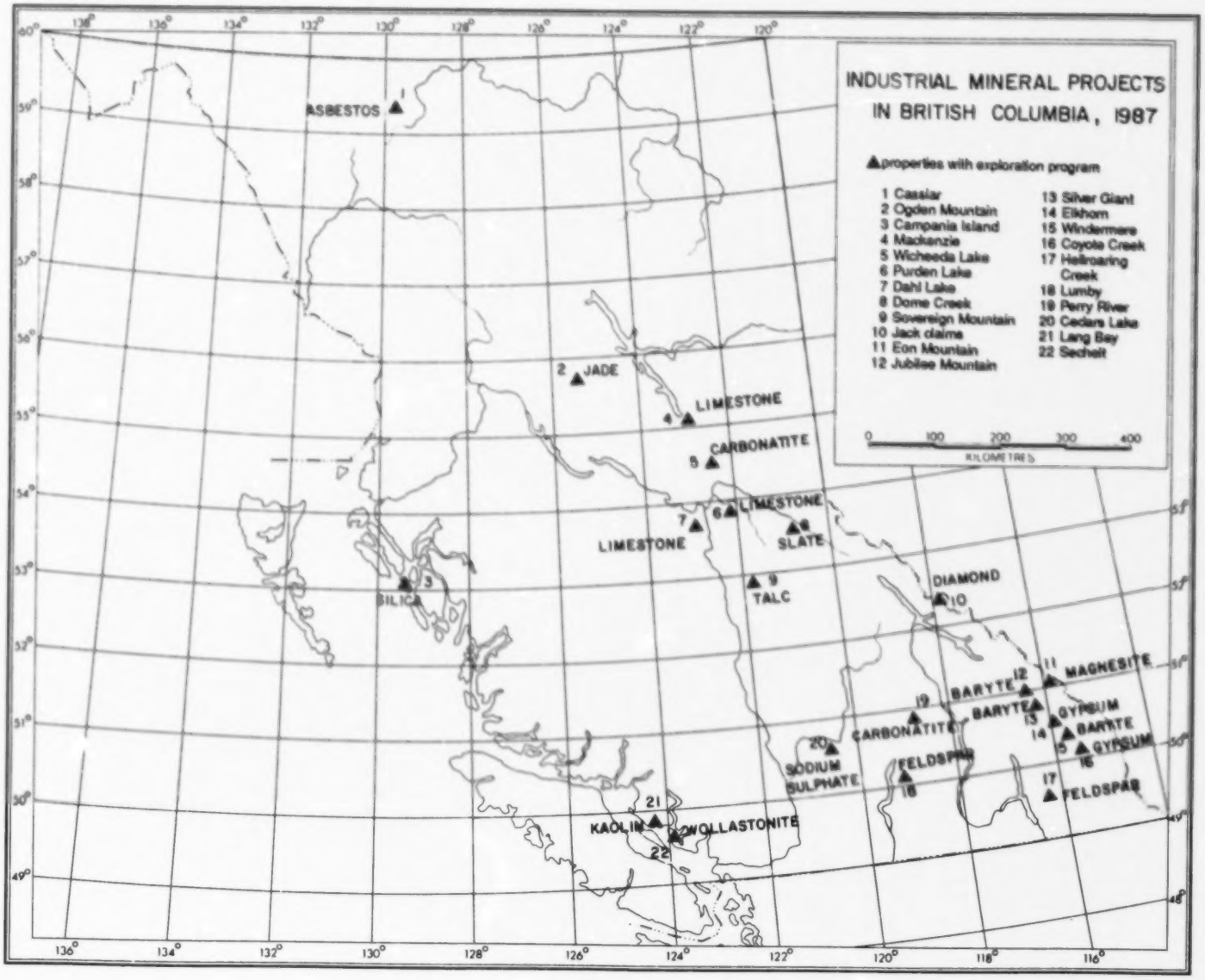

Figure 3. Industrial mineral projects in British Columbia in 1987

INDUSTRIAL MINERALS

Z.D. Hora, Industrial Minerals Specialist
Room 305, 756 Fort Street, Victoria, B.C. V8W 3A3
Telephone: (604) 356-2846

Exploration for nonmetallic mineral commodities in British Columbia during 1987 is quite diverse, resulting from either local demand situations or accidental discoveries. There are, however, indications that the "traditional" mining industry is becoming more interested in unconventional mineral commodities and companies are cautiously evaluating the potential of some industrial minerals (Figure 3).

The established producers of asbestos, limestone, barite, gypsum, magnesite and jade carried on a number of site-specific programs tailored to their needs at a particular deposit already in production or close to an active mine, or recently depleted mine or quarry. This type of project involved underground studies at the Cassiar-McDame asbestos orebody, investigation of limestone for the pulp and paper industry east and north of Prince George, and the evaluation of barite at several locations between Golden and Windermere, gypsum in the Windermere - Canal Flats area, detailed drilling at Eon Mountain magnesite quarry, and jade at Ogden Mountain.

As well, small-budget programs were run to study deposits of materials presently imported from abroad, for example, slate near Prince George, talc east of Quesnel and the sodium sulphate ("salt cake") in a lacustrine deposit near Kamloops. Limited work was done on feldspar properties at Hellroaring Creek and near Lumby, and on a silica prospect on Campania Island.

Carbonatites and kimberlitic diatremes were the subject of a systematic search and study in several parts of the province. Anomalous values of yttrium and rare earth elements brought some attention to a property in the Kechika River area and systematic geochemical sampling helped to discover a previously unknown carbonatite in the Parsnip River area north of Prince George. Detailed geological mapping and heavy minerals evaluation were conducted in the area of diatreme clusters north of Golden, where two microdiamonds were reported several years ago. Core from the holes drilled in 1986 on the Jack claims was subject to laboratory studies.

Some wollastonite properties received attention from several mining companies, but only a newly reported prospect near Sechelt was studied in detail by diamond drilling and blasting.

Probably the most significant industrial mineral exploration program this year was the drilling of the Lang Bay kaolin prospect. Its discovery in 1985 was followed by laboratory studies in 1986-87; this year's program involved a seismic

survey, a number of rotary-drill holes and two diamond-drill holes. Preliminary results indicate that while the upper part of the kaolin deposit is sedimentary in origin, there is also a significant thickness of kaolinized intrusive rock underneath. This observation, together with the discovery of a fireclay bed near Campbell River earlier this year, brings a completely new outlook to the economic potential for ceramic raw materials and other kaolin products in Upper Cretaceous sediments and the underlying rocks in coastal areas.

Queen's Printer for British Columbia©
Victoria, 1986

MR-1443